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WINTER WAR CHRONICLE
ISRAELI MYSTERE
SMALL AIR FORCES ALPHA JETS**

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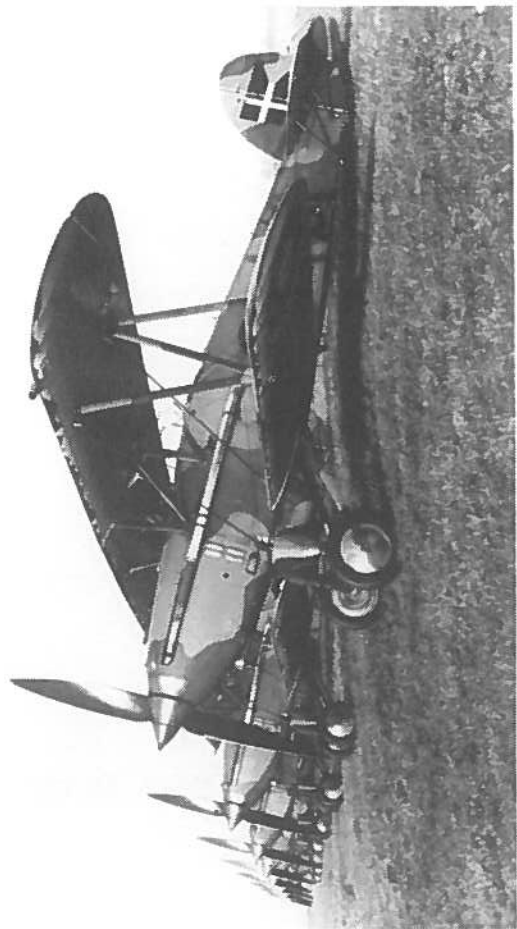
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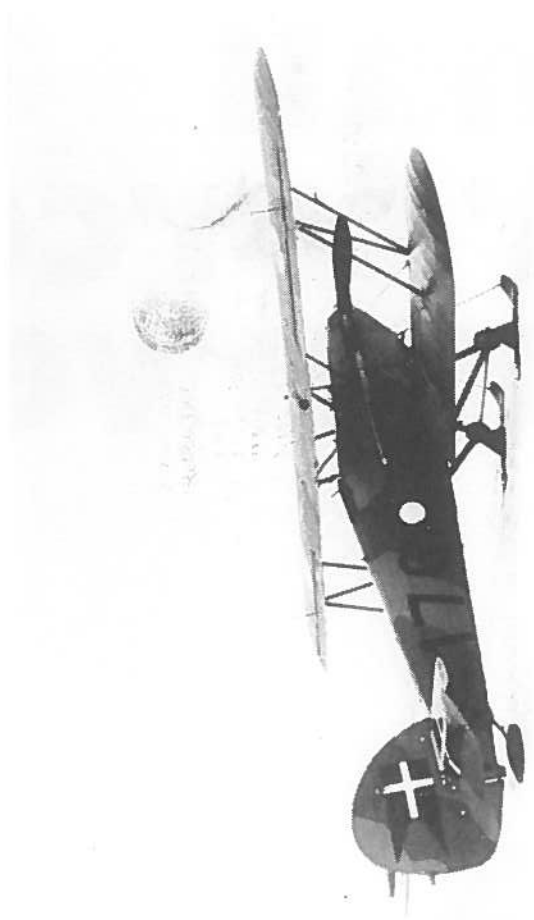
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SMALL AIR FORCES OBSERVER

The Newsletter of the Small Air Forces Clearing House

CONTENT

Abstracts.....	38
Letters (Dickson, Koppel, Jarratt, Van Aken, Thornburg).....	39
Kits (Do-27, He-280, Yak-38).....	40
Decals (Carpena).....	40
Denmark: April 1940 (Dildy).....	41
Danish Nimrods (Willadsen).....	45
Attack on Vaerlose Airfield (IPMS-Danmark).....	47
Books (Winter War, Brazilian Aircraft, Swedish Transport Aircraft, FFVS J-23, IDF/AF).....	52
Finnish Air Force in the Winter War (Stenman).....	53
Magazines (Air Action, Repules, Yuvam-Aeroplan, L + K).....	57
Israeli Mystere (IPMS-UK).....	58
Small Air Forces Alpha Jets (Cance).....	60
Austrian Capronis & Bredas (Gretzkyngier).....	68

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COVER COMMENTS: This cool view of a Finnish Air Force Morane-Saulnier MS-406 taking off from a snow-cover airfield is a fitting introduction to our continuing coverage of the Winter War of December 1939 to March 1940. A chronicle of this conflict begins on page 53. (Photo via Kaei Stenman)

PHOTO PAGE: Our commemoration of the 50th anniversary of WWII continues with the story of the Danish military air services in April 1940. Articles on this subject begin on page 41. Captions for this photos appear on page 47. (Photos via Bjorn Jensen.)

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(Continued on page 57.)

39

DENMARK: APRIL 1940

The Danish Air Services in World War Two

THE HAERENS FLYVERTROPPE

The Danish Army's aviation service, "Haerens Flyverkorps" (Army Aviation Corps) was initially established in August, 1922 after an abortive attempt between 1912 and 1919. The service never attained its authorized strength, having to be content to man only a single observation squadron (of 8 Potez XV.A2) and a training school (initially equipped with 5 old LVG B.III's and a pair of new Fokker C.I trainers)(19:164). In 1925 reinforcements -- in the form of 3 modified Fokker C.I's and 22 (15 two-seat and 7 single-seat) O-Maskinen (a Danish derivative of the C.I) -- began to relieve the LVGs in the training unit (20:84). All of these new aircraft were produced by the Royal Arsenal Workshops *Tojhusvaerk-stederne*. The Potezes in the observation squadron were replaced by 5 Fokker-built and 13 Danish-built C.VB reconnaissance aircraft. In 1932, when the service was reorganized into the *Haerens Flyvertropper* (Army Aviation Troops), this was still the only operational squadron. Under the reorganization the Danish "air force" hoped to finally realize its goal of establishing two fighter and three reconnaissance squadrons (19:165). In fact, on the 9th of April, 1940, the *Haerens Flyvertropper* consisted of:

1. ESKADRILLE

Established 1 Nov 32 as the first fighter squadron of the Danish "air force." This unit was initially equipped with 4 Bristol Type 105D Bulldogs (initially serialised J-151 through J-154) that had been purchased in 1931 (4:95). Five years later the Danish government obtained a license to produce the Gloster Gauntlet and after obtaining one pattern aircraft (serialised J-21) from the parent company in Britain, the Army Aviation Troops Workshops (*Haerens Flyvertropper Vaerksteder*) produced another 17 examples (J-22 thru J-38). The 1. Eskadrille was finally fully equipped as the first Danish fighter squadron by the end of 1938 (6:103). Early in 1940, as the Second World War threatened to engulf little Denmark, too, the *Haerens Flyvertropper* applied camouflage to their aircraft: it consisted of an ochre (greenish-yellow)/ dark grey-green top coat and light grey-blue undersurfaces (9:47).

2. ESKADRILLE

Established 1 Nov 32 when the only operational squadron, flying the remainder of the 18 Fokker C.VBs, was redesignated (19:165). In July 1937 two Fokker D.XXI's (serialised J-41 and J-42) were purchased from the factory in Holland. A license for Danish production was also acquired and the *Vaerksteder* built an additional ten examples in 1939/40 (10:158). These aircraft were powered by the 825 hp Mercury VIII engine and armed with two indigenously-designed DISA 8-mm machine guns mounted atop the fuselage. One example (apparently "J-47") was experimentally fitted with Madsen 20-mm cannon in underwing "blisters" (16:116). The 2. Eskadrille commenced conversion to the D.XXI in late 1939. All 12 of the fighters were delivered but the unit was not fully operational on the type by the time Denmark was invaded (10:158). On that date, 2. ESK had 8 D.XXI's

on strength. These aircraft were apparently finished in dark green/dark brown camouflage on top with pale azure undersides (16:40).

3. ESKADRILLE

Established 1 Nov 32. Lack of resources available to equip this unit initially resulted in it being formed on the remainder of 22 "O-Maskinen" single and dual-seat training aircraft that had been originally supplied to the *Flyverskole* (Flying School) at Klovermarken. In 1933-35, the Army Aviation Troops Workshops produced 23 new Fokker C.VE reconnaissance biplanes under license (19:165). The pattern aircraft (Fokker-built) and the first 11 license-built C.VEs went to 3. ESK, replacing the O-Maskinen training planes. These may have been supplemented by C.VBs from 2. ESK and additional C.VEs from 5.ESK. Early in 1940 a camouflage finish similar to that used on the Gauntlets of 1.ESK was applied (19:166).

5. ESKADRILLE

Established in 1935 on the second dozen license-built Fokker C.VEs. It is unknown if this unit was still on-strength at the outset of World War Two. Lack of information suggests that the unit was disbanded between 1935 and 1940 in order to keep 3. ESK fully operational with at least 12 aircraft (19:165).

THE MARINEN FLYVEVAESENETS

The Danish Navy's aviation service, *Marinen Flyvevaesenets*, was formally established on 15 September, 1923. Similar to the Army Aviation Corps, it had lived an informal existence in the years prior, based on the operation of various small flying boats that had been license-produced by the Royal Naval Dockyard (*Orlogsvaerftet*) (19:164). In the summer of 1919 the Naval Air Service initiated an experimental air mail service between Copenhagen and Stege with 5 German post-WWI Friedrichshafen FF.49s. These had been progressively replaced by license-built Hansa-Brandenburg W.29s and the flying school had been established (using 6 AVRO 504K trainers) by the time the *Marinen Flyvevaesenets* was instituted in 1923. Three years later, upon the acceptance of land-based aircraft, the service was further organized into two *Luftflotilles*: one for floatplanes, based at Copenhagen; and the second for landplanes stationed at Ringsted (19:165). The Danish Naval Air Service maintained this establishment until 9 April, 1940:

1. LUFTFLOTILLE

Established in 1926, flying the single remaining Friedrichshafen FF.49 and six of the eventual 16 Hansa-Brandenburg W.29s. The unit's mission was aerial reconnaissance of the Baltic approaches (11:67). The last well-worn FF.49 was withdrawn from service that same year (1:28). The accident rate of the H-B W.29s was fairly high, resulting in no more than nine aircraft ever being on-strength at any one time (17:104). These, in turn, were progressively replaced by (initially) six Heinkel H.E.8 floatplanes purchased from Germany. They were supplemented

The Danish naval air arm, too, could offer no resistance to the invasion. The only violent act was the destruction of the two Dantorps by Danish patriots at the Holmen naval base in order to keep them from falling into the hands of the invading Germans (15:119)

POSTSCRIPT

Although the two military aviation services continued to exist under the ensuing Nazi occupation, their activities were curtailed to the point of extinction (all flying was forbidden) (19:168). In fact, the 10 surviving D.XXIs (three of the badly damaged ones were eventually rebuilt) were placed in storage at Klovermarken (10:158). The 13 remaining Navy H.E.8s were dismantled and stored in Copenhagen (20:110). For over four years Denmark was placed under a very tolerant Nazi administration as the Third Reich's "model protectorate." However, the seemingly unending increase in acts of sabotage resulted in a typical tyrannical crack-down (18:191).

On 29 August, 1943, the Wehrmacht seized all Danish military and naval installations and equipment. The D.XXIs were taken on this occasion but their ultimate fate is unknown (10:158). Approximately 15 of the surviving Fokker C.VEs (also held in storage) were also seized. They were eventually refurbished with new engines and issued to an Estonian volunteer squadron for night ground attack (nuisance raids) duties on the Eastern Front from May until September, 1944 (20:178).

The Danish Navy did not allow such an ignominy and, forewarned, before dawn that day the service scuttled all of the warships in port and sent those at sea scurrying for neutral Sweden (18:193). As part of this last act of defiance the *Marinen Flyvevaesenets*' H.E.8s stored in Copenhagen were destroyed by Danish Resistance saboteurs (11:67).

Whatever the fate of the individual aircraft of the two Danish aviation services, the formal existence of the two services and their air arms ended on 29 August, 1943.

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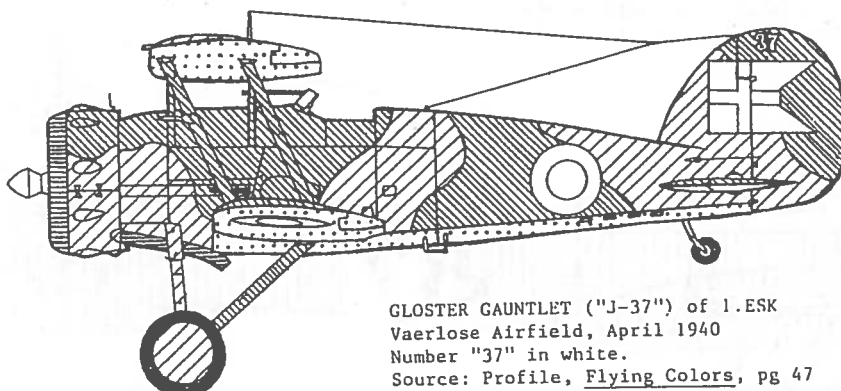
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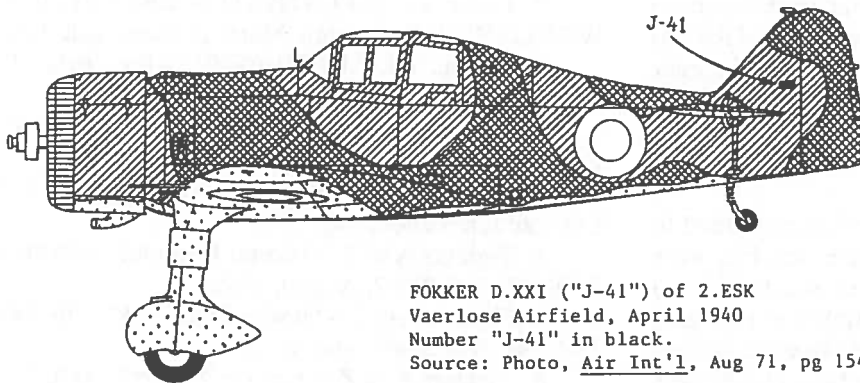
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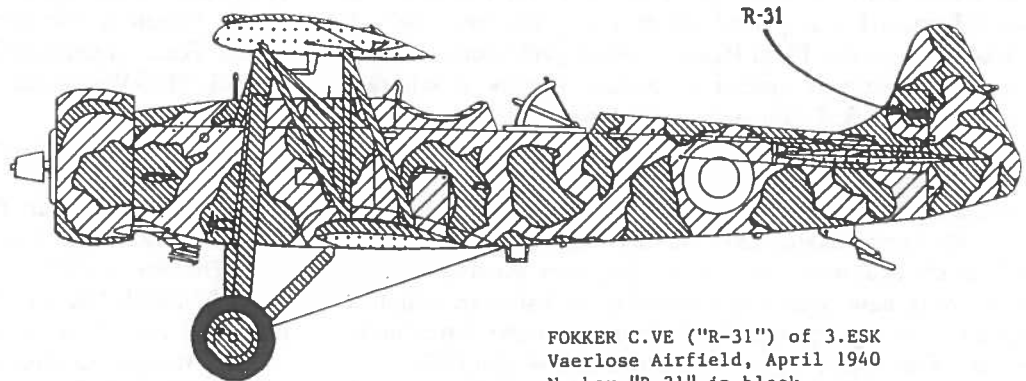


GLOSTER GAUNTLET ("J-37") of 1.ESK
Vaerlose Airfield, April 1940
Number "37" in white.
Source: Profile, Flying Colors, pg 47

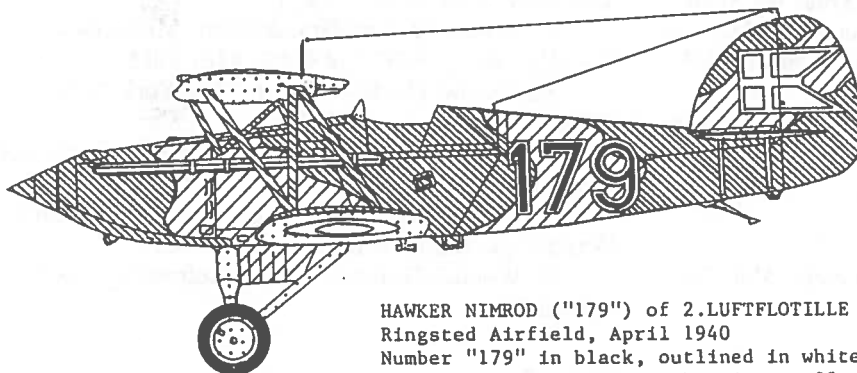
	Rust Red-Brown		Yellow-Green		Dark Gray-Green		Dark Green
	Dark Brown		Light Gray-Blue		Pale Azure Blue		Black Rubber



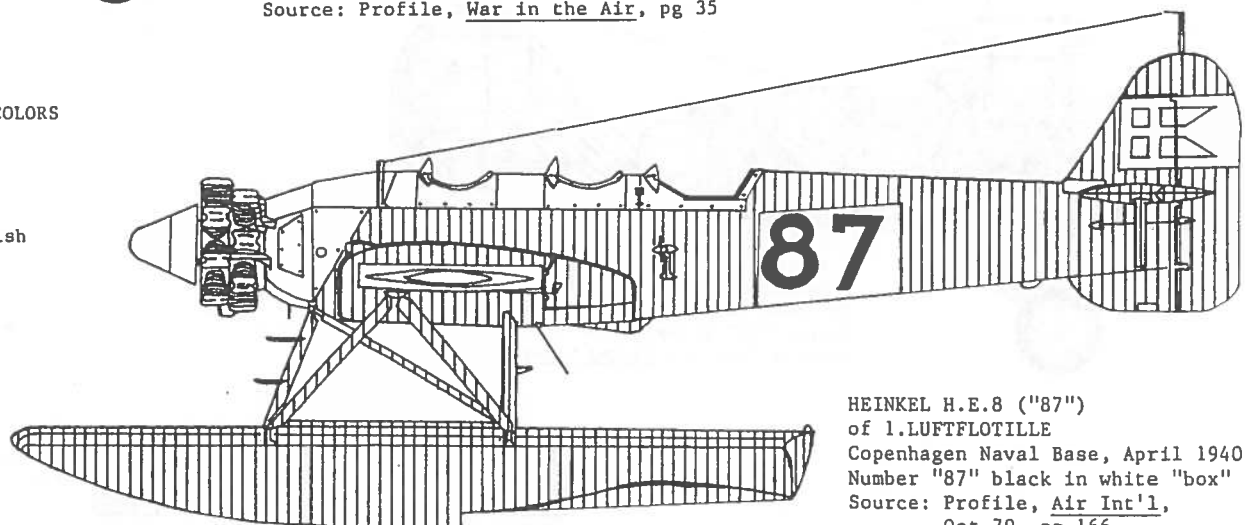
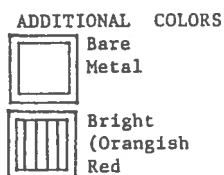
FOKKER D.XXI ("J-41") of 2.ESK
Vaerlose Airfield, April 1940
Number "J-41" in black.
Source: Photo, Air Int'l, Aug 71, pg 154



FOKKER C.VE ("R-31") of 3.ESK
Vaerlose Airfield, April 1940
Number "R-31" in black.
Source: Profile, Air Int'l, Oct 79, pg 166



HAWKER NIMROD ("179") of 2.LUFTFLOTILLE
Ringsted Airfield, April 1940
Number "179" in black, outlined in white
Source: Profile, War in the Air, pg 35



HEINKEL H.E.8 ("87")
of 1.LUFTFLOTILLE
Copenhagen Naval Base, April 1940
Number "87" black in white "box"
Source: Profile, Air Int'l,
Oct 79, pg 166

THE DANISH HAWKER NIMRODS

Danish Military Aviation at the Start of WWII

In Denmark as in many other countries, military aviation was developed by the existing services, the Navy and the Army. This was still the situation by the start of 1940 - the Royal Danish Air Force was only formed in 1950.

The Nimrod

At the outbreak of the Second World War, the main fighter of the Danish Air Service - and its most modern aircraft in service - was the Hawker Nimrod. Their history in Denmark goes back to 23 February 1933, when *Marinens Flyvevaesen* signed a contract with Hawker Aircraft Ltd. This covered two Nimrod Mk.II to be delivered in 1933 and licence production of a further ten at *Orlogsværftet* (the Naval Dockyards) in Copenhagen.

In the event, the first two Nimrods serialled 170 and 171 arrived in Denmark on 31 January 1934. 2.*Luftflotille* (2nd Air Flotilla) at *Luftmarinestation Ringsted* (Naval Air Station Ringsted) was designated as the operational unit to receive the new fighter; it received the Danish-built aircraft, serials 172 to 181, from November 1934 to September 1936.

It may be noted that the first aircraft were armed with two Vickers machine guns. These were later changed to the new, higher-powered (Danish designed and built) 8-mm M/33 machine guns. Additionally, four 12.5kg M/35 bombs could be carried; delivery of this ordnance by dive bombing was exercised. With steep dives, an angle of 60 degrees and, drop altitudes of 1200 m were used, while low-altitude bombing was done with 30 degree dives and release altitudes of 300 m.

Other Danish modifications concerned the undercarriage, where the original pneumatic shock absorption system was replaced by a hydraulic one. Skis were often used in winter time; as an example, all flying during five weeks of January-February 1940 was done on skis. Two types of skis were used, the "Polish" (wide) and "Finnish" (lighter type).

Warpaint

With the growing tensions in Europe, the original silver doped colour scheme gave way to camouflage. During the summer of 1938, experimental work led to a scheme of olive green and medium brown disruptive pattern above and light blue below. The topside of the upper wing was in green only. The serials were black, roundels and flags red and white.

In 1937, 2.LF moved to *Luftmarinestation Avno* (now home of the RDAF Flying School), which offered a better airfield, and from there, neutrality patrols were flown during the first months of the war. As mentioned above, these included operations on skis.

During this period, eight Nimrods were operational, divided between 5.LG and 6.LG (a *Luftgruppe* was subordinated to a *Luftflotille*). Of the other four built, three had been lost in accidents, and the last was under overhaul in Copenhagen. However, the Nimrods did not take to the air on the morning of 9 April 1940, when the German "brown communists" occupied Denmark.

The German occupation forces immediately forbade Danish military flying, although the armed forces were only forcibly disarmed on 29 August 1943. The Navy's aircraft were stored in Copenhagen.

The fate of most of the Nimrods is unknown. Some may have been removed by the Germans, before the hanger containing the entire Danish Naval Air Arm was sabotaged in the summer of 1943, with the contents burning out completely.

L.B.V aka Nimrod

Like, for instance, the United States, Denmark had different designation systems for Army and Navy aircraft. However, unlike the U.S. Navy's role-and-manufacturer system, Danish naval aircraft were designated according to configuration. This, the Nimrod received the Danish naval designation L.B.V (Land *Biplan* Type 5).

Other designation letters for Danish naval aircraft were H for *Hydro* (floatplanes) and F from *Flyvebaad* (flying boat) in the first position and M for *Monoplan* in the second position.

The Danish army used a different scheme, which in principle was similar to that of the USAAF. This system comprised a Roman numeral followed by a role code. Letters used were:

J for *Jager* (Fighter)

R for *Rekognosceringsplan*

S for *Skoleplan* (Trainer)

O for *Overgangspan* (Advanced trainer)

M for *Molleplan* (Autogyro)

In accordance with this system, the Fokker D.XXI was identified by the designation III J.

The Danish Naval Air Service in 1940

In addition to the nine Nimrods, the Danish naval aircraft were

13 H.M.II (He 8)

2 H.B.III (Hawker Dantorp)

2 L.B.III (Gypsy Moth)

5 L.B.IV (Avro Tutor)

1 F.M.I (Dornier Wal)

Of these, one H.M.II (serial No. 79) was actually in the air on the morning of the invasion. This was in Frederikshavn (just about the town farthest away from Germany), where it flew from the coast-defence ship *Peder Skram* on Frederikshavn roads to the harbour. Two more H.M.IIs were outside the main naval base in Copenhagen, one in Frederikshavn, and another in Slipskoven (a small harbour by the Great Belt).

The floatplane-equipped 1.LF was home based in Copenhagen

Most of the hydroplanes, including the single flying boat and the two Dantorp torpedo bombers, were in storage, as the winter of 1939-1940 was exceptionally hard (witness the Winter War described in the previous issue of SAFO), and ice had formed in Danish waters. In fact, the Germans attack was postponed until Hitler was sure of ice-free waters.

In addition to 2.LF, *Luftmarinestation Avno* housed *Marinens Flyveskole*, the naval flying school. On 9 April it had two Gipsy Moths and three Avro Tutors on strength.

The Danish Army Air Corps in 1940

In 1932 Army aviation was organized in *Haerens Flyvertropper*. In practice, all army aviation - including staff functions - was concentrated at Vaerlose airfield by March 1940. The units were:

- 1.Eskadrille with thirteen IJJ
- 2.Eskadrille with seven IJJ and three IR
- 3.Eskadrille with nine IIR, two IR, and one IIIS
- 5.Eskadrille with twelve IIIR, two IR, and one IM
- Flyveskolen* with twelve Is, five IIO, and one IIIS

These aircraft codes translate into

- IJJ Gloster Gauntlet
- IIJJ Fokker D.XXI
- I-IIIR Fokker C.V (varying wing and engine fit)
- IS Tiger Moth
- IIO O-Maskinen (Danish development of Fokker C.I)
- IIIS D.H.84 Dragonfly
- IM Cierva C.30

The attack on Vaerlose on the morning of 9 April is described elsewhere in this issue. Before this, IIR serial R-52 of 5.Eskadrille performed a reconnaissance flight from Vaerlose to Jutland and back. The crew observed large numbers of German aircraft heading north over Danish territory. Before returning, their base had been attacked.

More Aviation-Related Activities

While the Danish aircraft were thus unable to influence the events the *Luftwaffe* did suffer losses from the puny Danish defences.

The Danish anti-aircraft units were equipped with 75-mm Vickers model 1931 AA guns and 20-mm Madsen machine-cannons. There were three batteries in Southern Jutland. At least one German aircraft was shot down by these guns.

What if?

By 1940 plans for modernization of the Danish military aviation were being implemented. The Army was planning equipment with the Fokker G.I. For the Navy's part, licence

production of the L.B.I was initiated; the Fairey P.4/34 had been selected. A contract for licence production of 12 aircraft was signed in 1938, 16 Rolls-Royce Merlin engines were ordered on 14 November 1938, and all drawings had arrived in Denmark by mid-1939.

But all this, of course, was too late, and the result could be seen in 1940.

Small Danish forces succeeded in inflicting losses and delays on the advancing German units. That considerably more was not done was entirely caused by a conscious decision on the part of the leading politicians at that time, including foreign minister P. Munch. These left-wing leaders were the same who had opposed defence spending during the twenties and thirties, and who preferred to fawn on the strong party rather than keep their back straight.

Kai Willadsen, IPMS-Danmark #2; SAFCH #516.

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Bollerup Boghandels Forlag, Nygade 12, DK-6950 Ringkobing, Denmark.

(Continued from page 40.)

Akademie (flying school) in 1946. French aircraft are represented by a LF.IXc from GC 1/4 "Charognards" in Indochina, 1947-48; a very pretty overall white (or red, or blue) MK.IXc with a bold lightning bolt along the fuselage, from the *Patrouille Tricolore*, circa 1947; and a naval Seafire F.XV of Flotille 54 S. aboard the *Arromanches* in 1950. The Commonwealth birds are a RN Seafire MK.Ib of 731 Sq in June 1945, a Seafire Mk.IIc shared by 808/809 Sqs in May 1945, an Australian Mk.IXb of 451 Sq (carrying blue/red roundels) in Corsica, 1944, and a Mk.IXe of 132 (Norwegian) Sq in Hol-

land, 1944. This last aircraft was the personal mount of W/C Rolf Arne Berge.

48.09, F-100D International. FF 45,-

This sheet is similar to 72.16, but unfortunately does not include the Turkish bird. My personal preference would have been to drop the USAF bird in favor of the Turk, but undoubtedly Carpena believes the sheet will sell better with the USAF aircraft. Sure would have been nifty to do that warlike Turk in quarter scale. Anyway, in this larger scale you can really appreciate the extraordinary details on the Carpena sheets.

48.10: Bataille de France 1939-1940. La Chasse, 1 Partie. FF 45,-

Similar to 72.15, but includes only one of each aircraft depicted: the Bloch MB.152 of CG II/9, the MS.406 of GC III/1, the CR.714 of CG 1/145, the Dewoitine D.520 of GC 1/3, and the Lafayette Escadrille Hawk 74A-1. All five aircraft are available in 1/48 as vacuforms from JMGT in France. Gull Models also makes a D.520, and, if you can find one, AMT used to make an injection molded P-36 - best bashed with a Monogram P-40B to make a decent model.

David H. Klaus (SAFCH #891), 3404 Ramsgate Terrace, Alexandria, VA 22309-2142.

THE ATTACK ON VAERLOSE AIRFIELD

Operation "Weserübung" was the code name for the attack on Norway and Denmark. Norway was the main target and the original plans called for the use of Danish airfields and ports, but not for the occupation of Denmark. The decision to occupy Denmark was made because the Luftwaffe was not satisfied that Alborg airport could be opened to the Luftwaffe by political pressure alone. The pressure on Hitler to attack Denmark was supported by the Kriegsmarine who wanted to be sure that the northern-most Danish ports of Frederikshavn and Skagen would remain open so they could be used in the attack on Norway.

At 0415 on the morning of 9 April 1940, the Danish capital, Copenhagen (Kobenhavn), was over flown by Heinkel He-111 dropping the notorious "Oprop" - leaflets telling the Danish population that Denmark was now protected by the German Army against Allied aggression. The actual fighting lasted only 2 to 3 hours before the Danish government surrendered and forbade further resistance - a decision that is still the subject of much debate.

The only combat by the Danish Air Force took place at Vaerlose, when the Germans dispatched a Zerstorergeschwader of Bf-110s to neutralize of the Danish aircraft on the ground. Among the 45 aircraft at Vaerlose, the only modern planes were 12 Fokker D-XXI fighters. The other aircraft present were Gloster Gauntlets, Bristol Bulldogs, and Fokker C.Vs. In addition to these there were a number of training aircraft.

On the morning of the 9th, the aircraft were lined up outside the hangers warming up their engines in preparation for dispersal to small airfields spread around the countryside. This had not been done earlier because the Danish government feared that such a move might provoke a German attack (all in vain).

A telephone call from Copenhagen informed Vaerlose of the German invasion and the squadrons were ordered to takeoff immediately. The first aircraft to take off, a Fokker C.V serial R-49, was at an altitude of 50 m when the first wave of Bf-110 attacked. The Fokker was shot down and its two crew members killed. The Danish airmen on the ground had to take cover from the machine-gun fire of the Bf-110s and from own bombs exploding on their burning aircraft. The Germans used only cannon and machine guns and no bombs were dropped.

The only Danes killed were the crew members of the ill-fated Fokker. Eleven Danish aircraft were destroyed and 14 others heavily damaged.

Although the only defence the Danes could put up was some light-machine-gun fire, two of the German aircraft were hit. One had to return to Germany on one engine and the other made a crash landing near the airfield.

After Denmark surrendered, the surviving aircraft were put into storage, and the subsequent fate of some of them has never been ascertained. It is believed that some of the Fokker C.Vs were used by the Luftwaffe.

The German commander of the attack remembers that his orders were to prevent any Danish airplanes from leaving the ground. In particular, it was thought important to eliminate the Fokker D-XXIs since these might have been able to cause serious problems for the Bf-110s in a low-level dog fight. As it turned out, we will never know what the Danish Fokkers could have done against the German Bf-110s.

APPENDIX

The Danish Fokker C.Vs, built under licence in Denmark from 1933 to 1937, were reconnaissance biplanes made of wood and steel tubes covered with fabric. The engine was a 550 hp Bristol Pegasus IIM2. Armament consisted of two fixed and one moveable 8-mm machine guns. Maximum speed was 260 km/hr.

The "dangerous" Fokker D-XXIs entered service in 1938 and were, except for the first two, built in Denmark under Dutch licence. They were a low-wing monoplane of wood and steel tube construction. The powerplant was a 825 hp Bristol Mercury VIII which gave it a maximum speed of 460 km/hr. Armament consisted of two 8-mm and two 20-mm machine guns and a 100-kg bomb load.

Translated by Peter Nellemann, IPMS Danmark.

PHOTOS

Photos on page 36.

a. Hawker Nimrod, 175, in camouflage. This aircraft was delivered in 1935 and suffered the same fate as the other Nimrods which were stored in 1940.

b. Hawker Nimrod, 178, was built in 1935 and was destroyed in 1938 when a practice bomb hit its propeller. The pilot parachuted and survived.

c. Almost the entire aircraft establishment of 2. Luftflotille (2nd Air Flotilla). In front is aircraft 170.

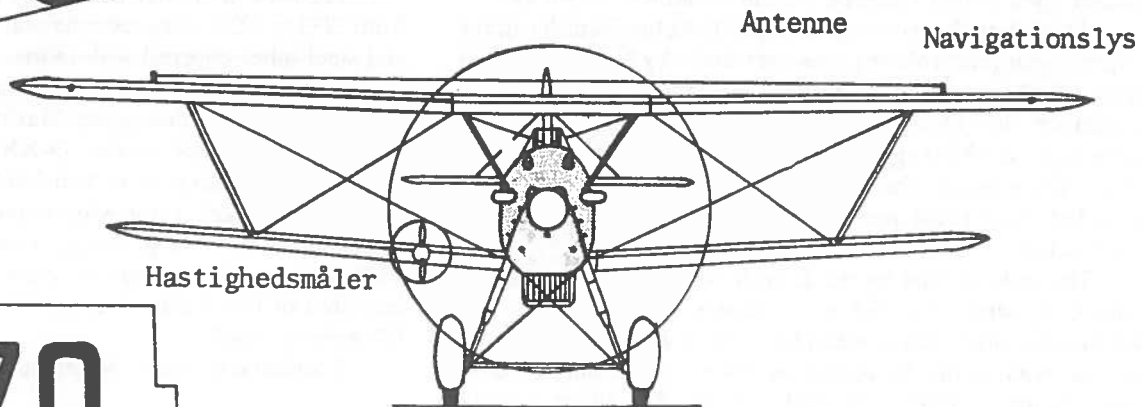
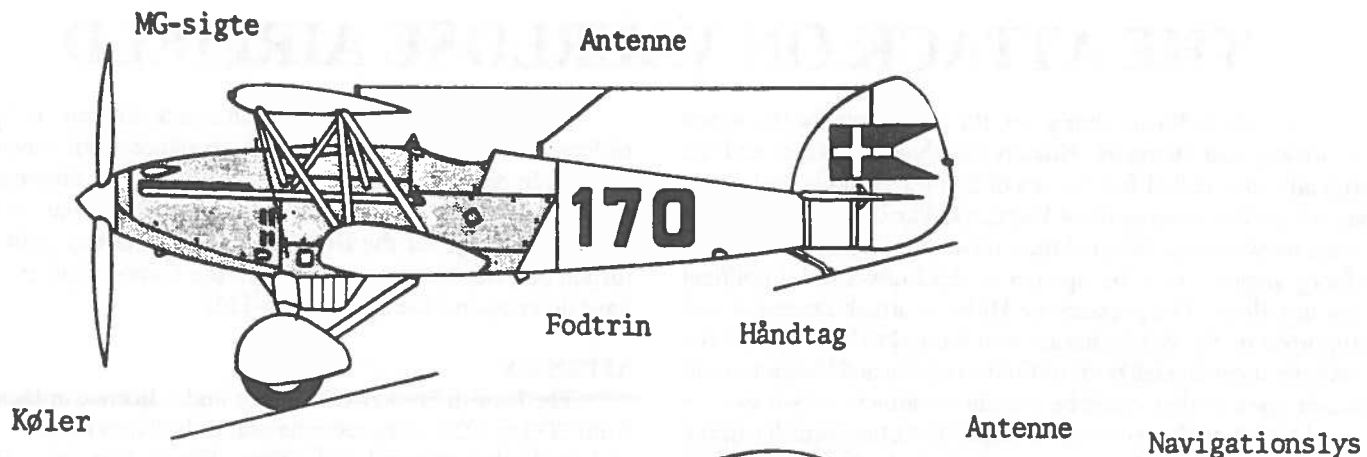
d. The first Danish Nimrod, 170, with skis designed on the Finnish model.

(All photos Royal Danish Air Force via Bjorn Jensen, IPMS-Danmark.)

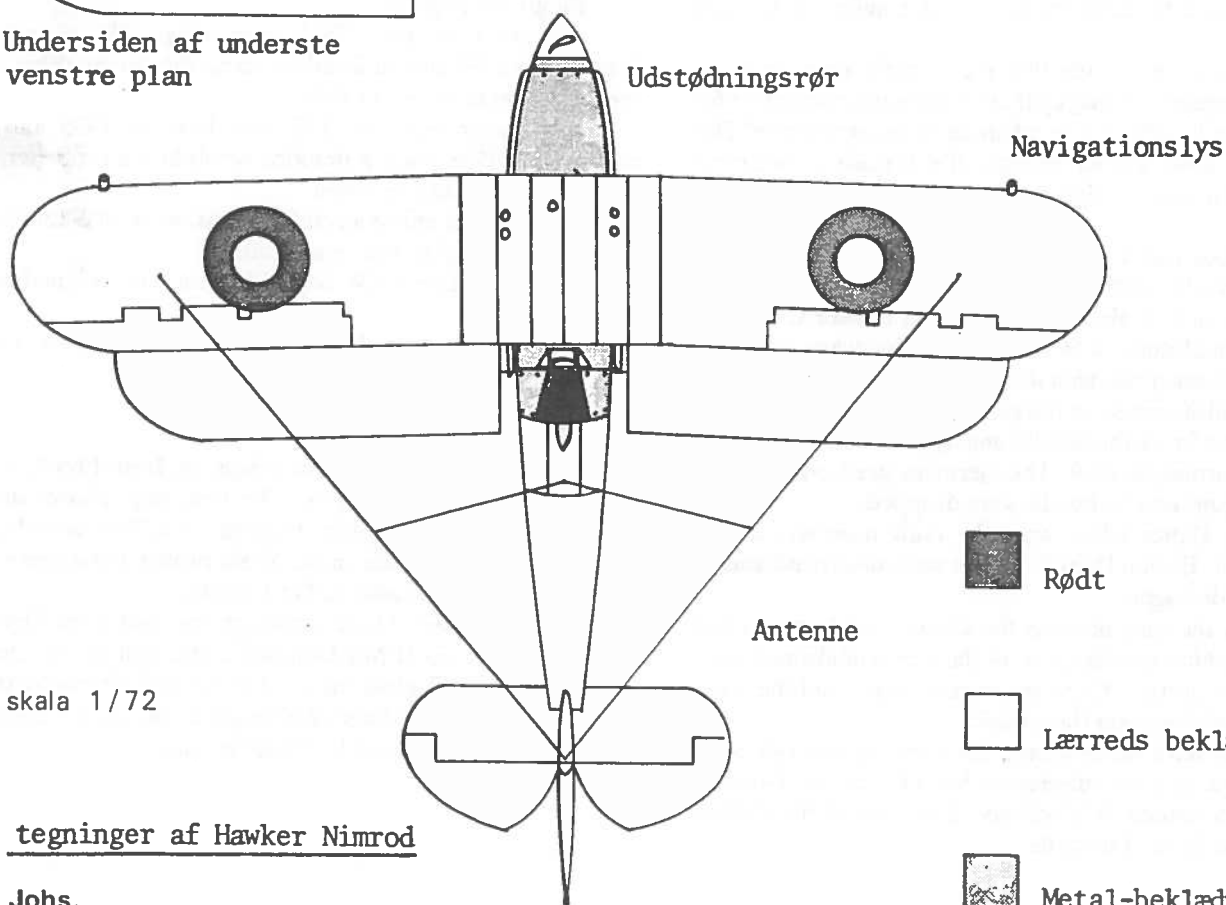
DRAWINGS

Hawker Nimrod: These drawings are from Flyvehistorisk Tidsskrift via IPMS-Danmark. The first page shows aircraft '170' in the original silver dope paint scheme. The second drawings shows the same after in the khaki brown, olive green, and light blue camouflage adopted in 1938/39.

Fokker D-XXI: These drawings are also from Flyvehistorisk Tidsskrift via IPMS-Danmark. The first shows aircraft 'J-42' in an overall gloss silver. The second drawings shows aircraft 'J-47' in camouflage of olive green, medium brown, and light blue. Mixes are given for Humbrol paints.



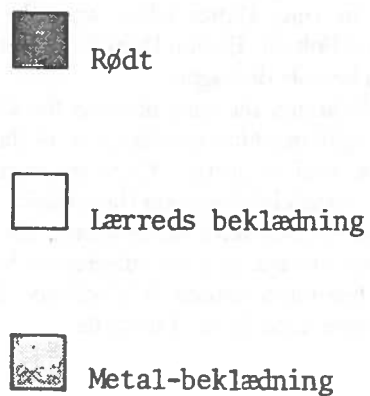
Undersiden af underste
venstre plan

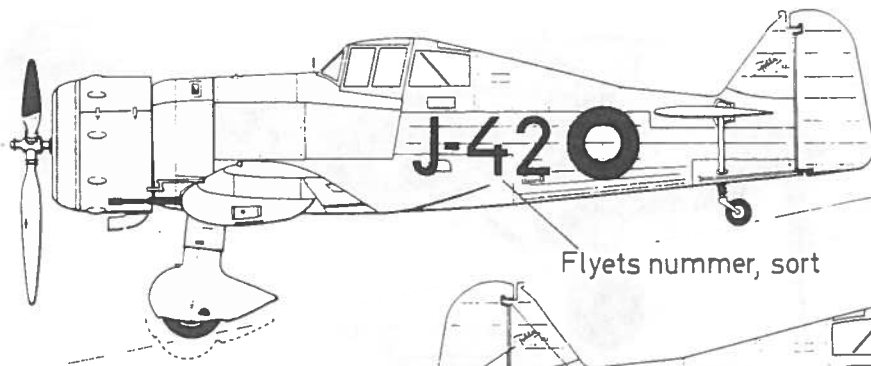


skala 1 / 72

tegninger af Hawker Nimrod

Johs.



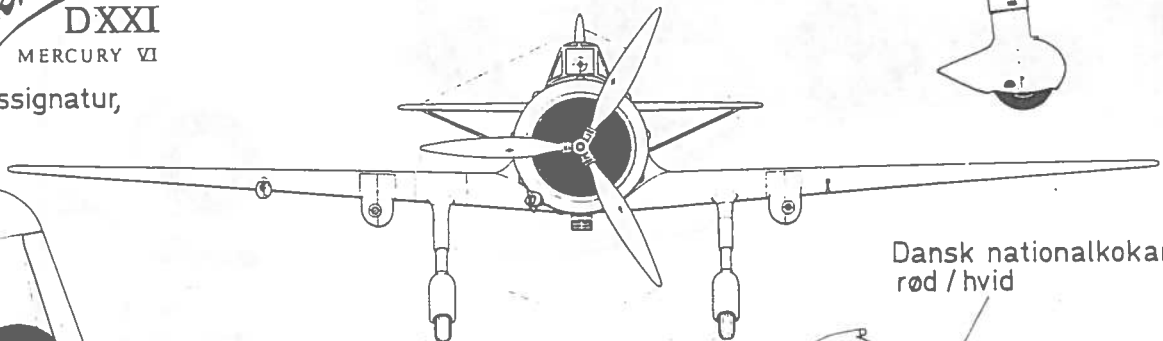
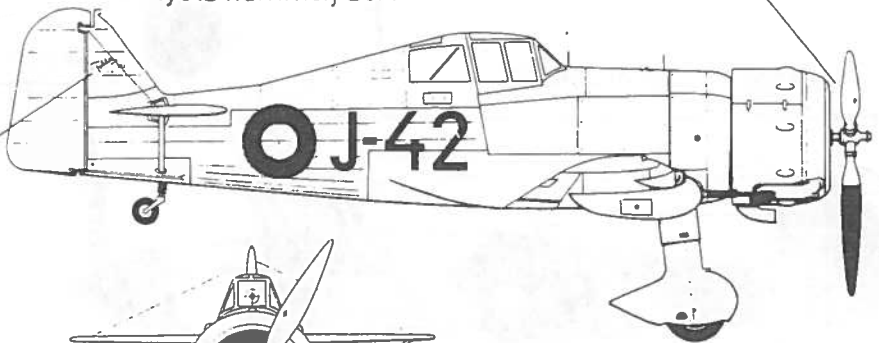


Flyets nummer, sort

Propel: blank metal,
sort bagside.

Fokker
DXXI
MERCURY VI

Fabrikssignatur,
sort.

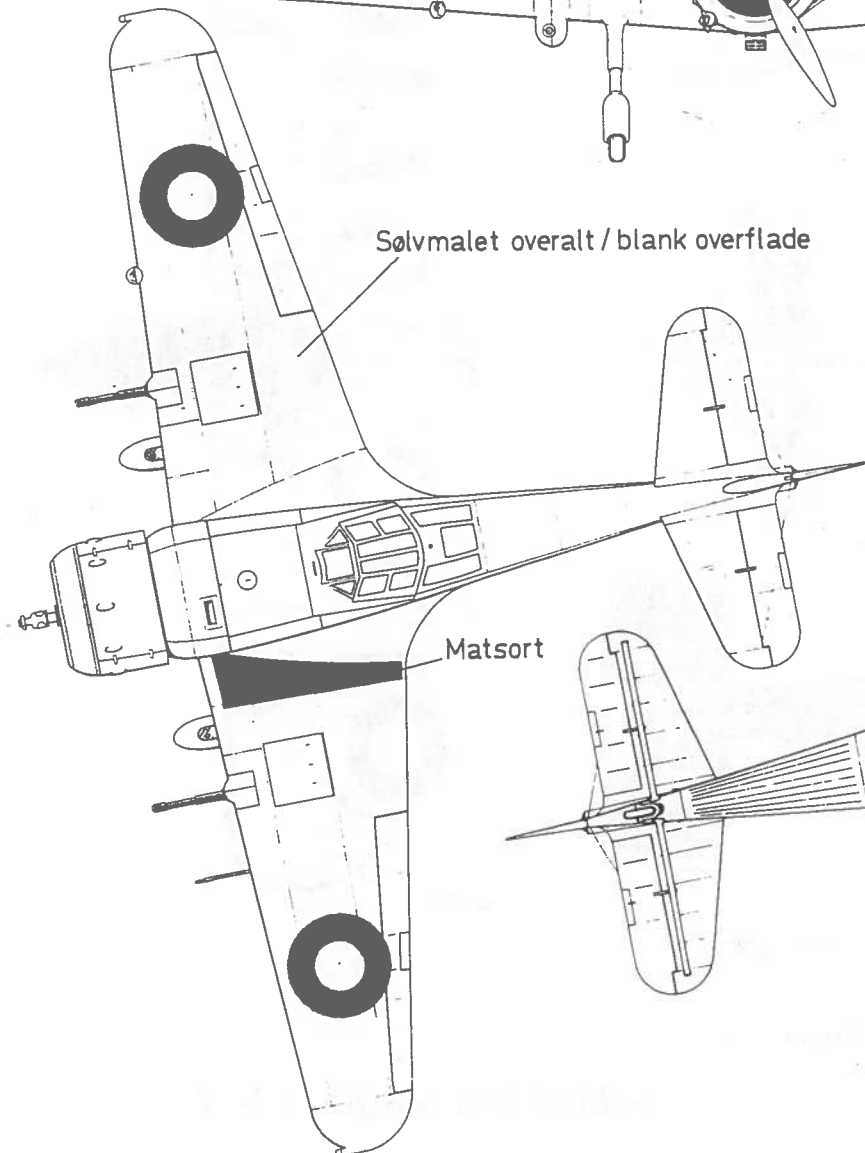


Dansk nationalkokarde
rød / hvid

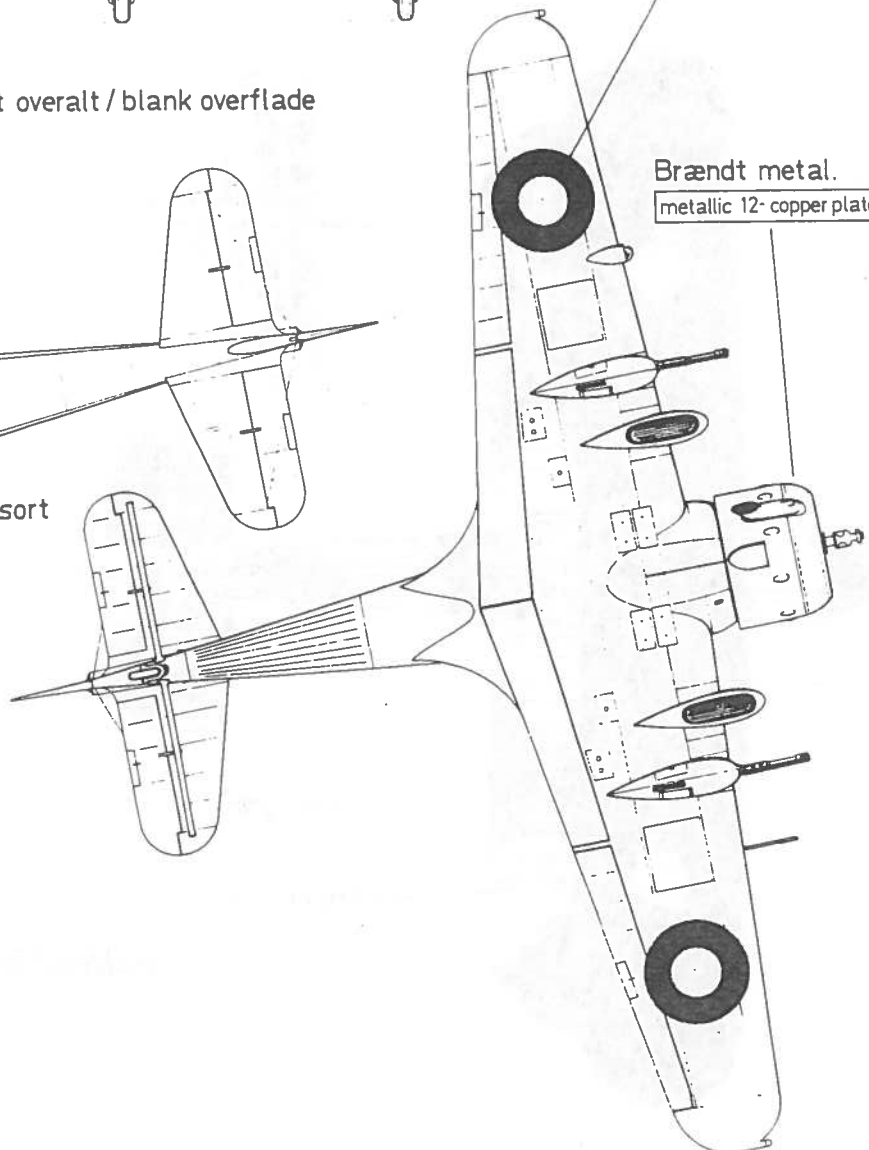
Sølvmalet overalt / blank overflade

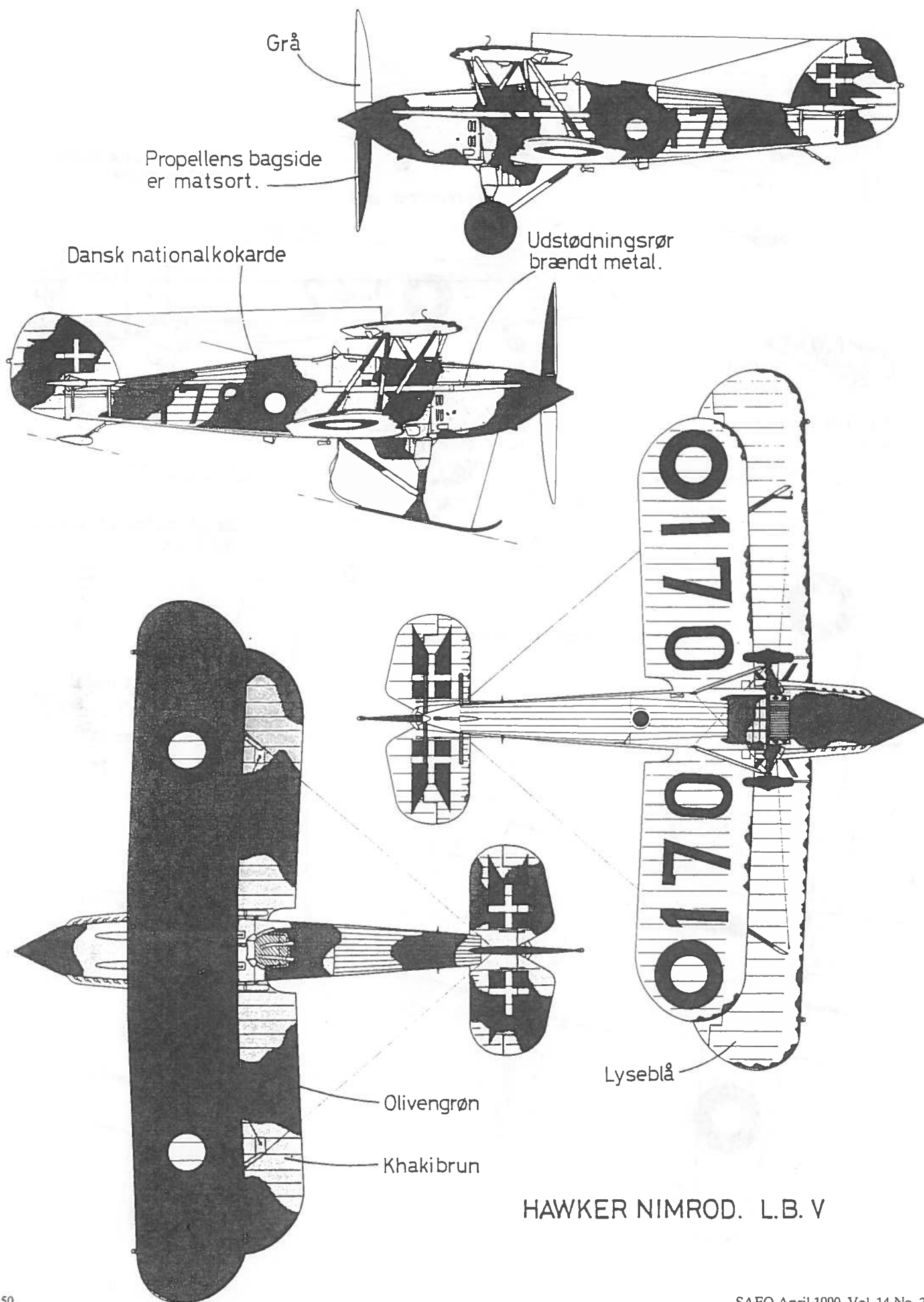
Brændt metal.

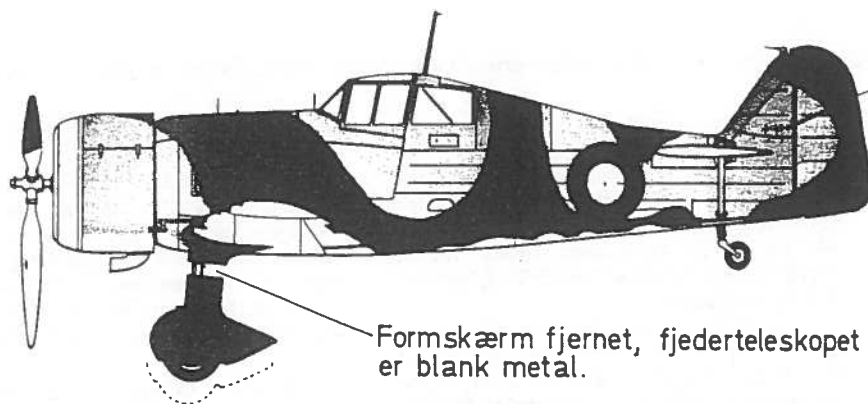
metallic 12- copper plate



Matsort







J-47 Flyets nummer, sort.

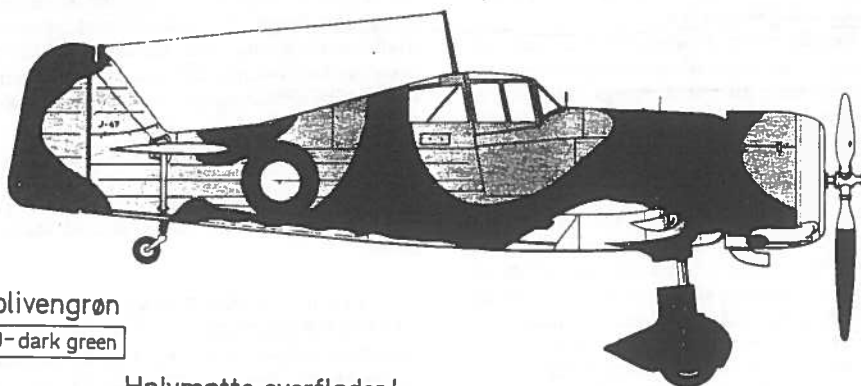
Se også billedet af J-44 med store lysegrå tal efter samme skabelon som på det tidligere sølvfarveskema.

Lysegrå

matt 34-white	- 15 dele
matt 64-light gray	- 1 del

Formskærm fjernet, fjederteleskopet er blank metal.

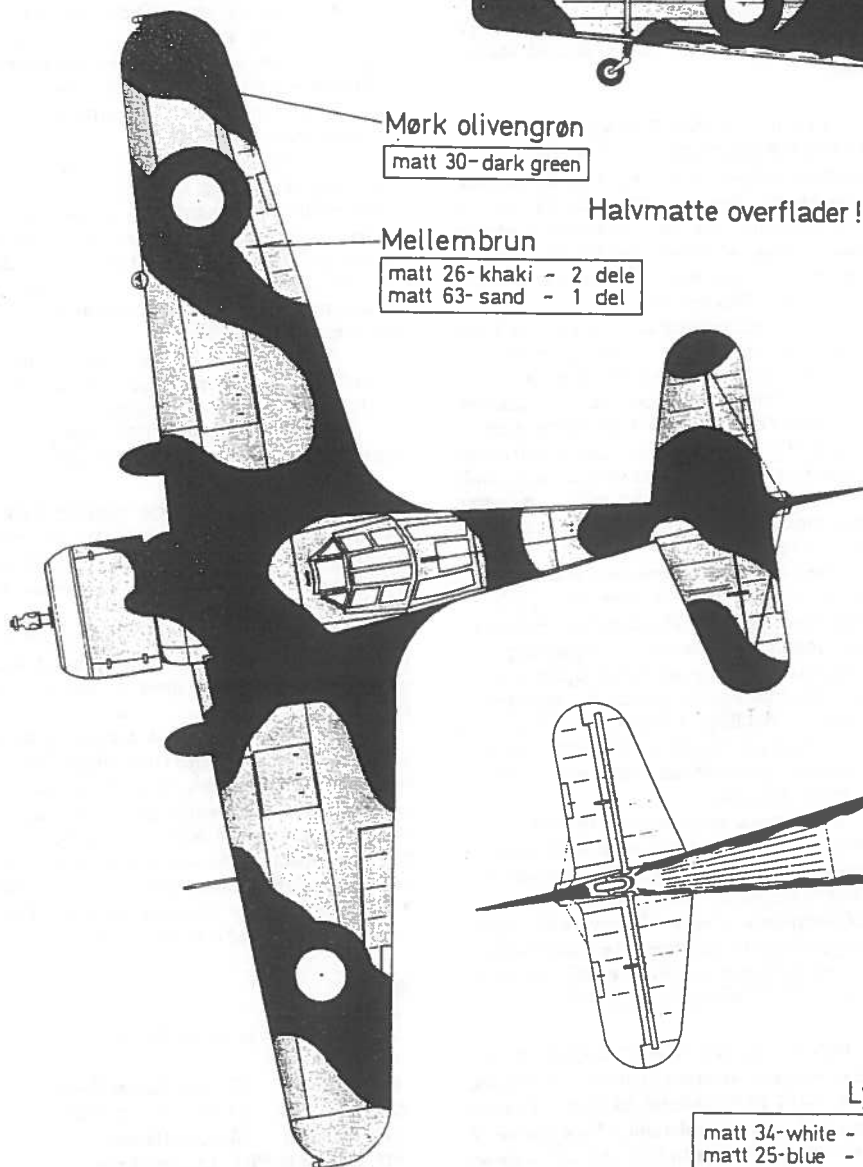
III J FLYVERTROPPERNES VÆRKSTEDER.



Mørk olivengrøn
matt 30-dark green

Halvmatte overflader!

Mellembrown
matt 26-khaki - 2 dele
matt 63-sand - 1 del



Lys blå

matt 34-white	- 15 dele
matt 25-blue	- 1 del

Thomas Kyrog-Sørensen
Research: Thorkild Wiehe

ILMAVOIMAT TALVISODASSA, THE FINNISH AIR FORCE IN THE WINTER WAR, Kalevi Keskinen and Kari Stenman. 160 pages, 21 cm by 30 cm, 105 photos, 8 water colors, 4 maps, 11 tables, and English summary. Tietoteos, Espoo, Finland. Hardbound.

Everybody admires the series on Finnish aircraft "Suomen Ilmavoimien Historia" by Keskinen, Stenman, & Niska and published by Tietoteos. Now, this publisher and the first two authors have produced a book commemorating the 50th anniversary of the Finnish Air Force's participation in the Winter War.

Besides the hardbound covers and the 32% larger pages, this book differs from the series in the absence of scale aircraft drawings. However, in common with the series is the high-quality paper that allows excellent reproduction of the multitude of photos. Because of their large size the photos are very striking, especially those that extend across the binding to cover two pages. (there's an in-flight view of Fokker C.X FK-85 on which you can almost read the instruments.) The color art consists of water colors depicting aerial actions, which, while catching the spirit of the events, are not as satisfying to this reviewer as would be color profiles.

The text is in Finnish, but the reader will be so engrossed in the photos that it will be a long while before he even notices this. Photo captions in English, a 4-page English summary, and the self-explanatory tables increase the book's usefulness for the non-Finnish reader. The tables include: "Strength of Frontline Units", "Finnish Air Force Commanders", "Warplane Purchases in 1937-39", "Warplane Purchases during the Winter War", "Mission Analysis", "Aerial Victories", "Top Scoring Pilots", "Losses", "Damaged", and "Soviet Air Forces". The "Aerial Victories" table lists the Date, Plane (aircraft registration), Squadron, Scorer, Location, Victim (aircraft type and unit). What modeler could resist modeling Gladiator GL-263 flown by Lt. P. Berg on 2 February 1940 when he shot down an I-153 of the OAIÉ near Bromarv? "Losses" lists Date, Plane (aircraft registration), Squadron, Crew, and Circumstances.

Excerpts from the English Summary, reproduced with the generous permission of the authors and publisher, appear elsewhere in this issue of SAFO.

ILMAVOIMAT TALVISODASSA is an outstanding book that belongs in the library of all enthusiasts interested in the small air forces in WWII. For price and method of payment, contact: Tietoteos Publishing Company, P.O.B. 40, SF-02211 Espoo, Finland.

BRAZILIAN DIRECTORY, IPMS-Brazil. 95 pages, 8.5 in. by 13 in., spiral-bound with plastic covers.

This "Special Issue" consists of drawings of Brazilian aircraft that have been published since 1975 by IPMS-Brazilian members either in IPMS-Brazil's own magazine or in other magazines (including SAFO). This issue was distributed by IPMS-Brazil during the IPMS/USA 1990 National Convention.

The book begins with a history of Brazilian national insignia: Did you know that the "star" insignia was adopted in 1934? Have you wondered about the order of the colors of the rudder stripes?

Fifty-two aircraft types are illustrated, from the Santos-Dumont 14bis to the AMX. A few of the more unusual or particularly attractive aircraft covered along the way include (but are not limited to): Spad 7C1, DH Fox Moth, Boeing "F4B", FW-44J, FW58B, NA-46, Hudson, Catalina, A-20K, P-47D, Meteor, Albatros, Tracker, T-28, Xavante, F5B/E, and Tucano.

As should be expected from material assembled over such an extended period of time and from such a variety of sources, the quality of the drawings (and supportive information) varies from excellent to sketchy. However, all drawings contain useful markings and color information, and this book can be recommended to all modeler wishing to add some usually-marked models to their collection.

The price of this book is \$10.00, but do not send money. Send "kits or IRCs in the above amount" to Antonio Pereira Linhares, Rua Arquias Cordeiro 316/502 20770, Rio de Janeiro, Brasil.

FLYGLANSRITNINGAR 5: TRANSPORTFLYGLAN 1926-1989, Bjorn Karlstrom, Allt om Hobby AB, Box 42006, S-126 12 Stockholm, Sweden. 27.5 cm by 21 cm, 162 pages, softbound. 171 b/w and 22 colour photos. 5-view drawings of 29 types in 1/50, 1/72 or 1/144 scale (in some cases in both 1/50 and 1/72 scale). £ 12.95 from Midland Counties.

This is the penultimate volume in a series covering the aircraft types used by the RSvAF since 1929. The following volumes have been published: #1 Trainers, #2 Fighters, #3 Bombers, Attack, and Torpedo aircraft, #4 Recce aircraft, and now #5 Transports. Volume 6 will cover helicopters, test aircraft, and various other odds and ends. These volumes all follow the same general format, although the number of pages and photo vary somewhat.

The basis of these books are the drawings by Bjorn Karlstrom, who has been an aviation illustrator since the 1940s. The drawings are generally clear and of good quality. Accompanying each drawing is a number of representative photos of the aircraft. All drawings and photos are captioned in both Swedish and English. There is no narrative as such, although a few pages are devoted to general comments on colour schemes and very brief service histories of each type.

This series is quite probably the best way to obtain a source of reference on RSvAF aircraft, particularly if your knowledge of Swedish isn't too hot. And, if you are as modeler, many of the drawings of lesser-known types will prove useful when modeling aircraft in markings other than Swedish.

Leif Hellstrom (SAFCH #786), Servituts-vagen 3, S-145 59 Norsborg, SWEDEN.

FFVS J 22 (FLYGHISTORISK REVY NR.35), Swedish Aviation History Association, Box 308, S-101 24 Stockholm, Sweden. 30 cm by 21.5 cm, 110 pages, hardbound, 93 b/w photos, 7 colour photos, drawings in 1/72 and 1/48 scale as well as numerous cut-a-ways, detail sketches, etc. Price TBA.

There is no doubt that this is the definitive history of the Swedish WWII J 22 "panic" fighter, 198 of which were produced. Its development and service is well covered from every conceivable

angle, with most of the text written by people actually involved at the time.

Unfortunately for 99% of the world's population, it is all in Swedish. But, the photo coverage is very good and for anyone wanting to build a model of this little radial-engined fighter, there can be no better source of information.

Leif Hellstrom (SAFCH #786), Servituts-vagen 3, S-145 59 Norsborg, SWEDEN.

G-SUIT: COMBAT REPORTS FORM ISRAEL'S AIR WAR, Halperin & Lapidot, Sphere Books Ltd., PO Box 11, Falmouth, Cornwall, England TR10 9EN. 20 cm by 12.5 cm, 203 pages, softbound. 16 b/w photos of poor quality. Price £ 3.99.

This is a collection of some 38 stories of air combat involving the IDF/AF from 1955 to 1986, as told by the air crew. These are not combat reports as such, but rather narratives of varying length and style, which have previously appeared in the Israel Air Force Journal. The majority of the stories are from 1970 and onwards; only three of them are from before 1967.

Most of the narratives are highly readable and highly interesting, even for someone not particularly interested in the IDF/AF. Not surprisingly, most describe Israeli triumphs, including the downing of five Soviet-piloted MiG-21s on 25 July 1970. But, there are a few detailing the experiences of crew members shot down, such as the pilot of a Kfir lost over Beirut in 1983.

The approach of this book is definitely "fresh" and it is recommended to anyone who would like something a bit different.

Leif Hellstrom (SAFCH #786), Servituts-vagen 3, S-145 59 Norsborg, SWEDEN.

FROM THE WAR OF INDEPENDENCE TO OPERATION KADESH, IDF/AF History Branch, Israel. 25.5 cm by 18 cm, 399 pages, hardbound. 165 b/w photos, numerous maps, tables, etc.

The good news is that this book on the early years of the IDF/AF has all the signs of being a splendid one. The bad news is that it is all in Hebrew!

Nevertheless, by some careful cross-referencing, quite a lot of highly interesting information can be gleaned from this book. There are several appendices, one of which gives the number of aircraft of each type in service during each year. So far, I have managed to decipher about half of this list. Another appendix appears to be some sort of "Order of Battle" for the Sinai campaign. The bits I think I have figured out read as follows:

Sq 69: ?
100: ?
101: Mystere 16 a/c at Hatzor
103: ?
105: Mustang 13 a/c at Ramat David
110: Mosquito 13 a/c at Ramat David
113: Ouragan 22 a/c at Hatzor
115: Mosquito PR1 2 a/c at Ekron
116: Mustang 16 a/c at Ekron
117: Meteor 12 a/c at Ekron
119: Meteor NF13 2 a/c at Ramat David
140: Texan 17 a/c at Hatzorim
147: Stearman 25 a/c at ?

(Continued on page 56.)

THE FINNISH AIR FORCE IN THE WINTER WAR

(Editor's Note: This article is a summary of the "English Summary" in the book *ILMAVOIMAT TALVISODASSA, THE FINNISH AIR FORCE IN THE WINTER WAR*, by Kalevi Keskinen and Kari Stenman. It has been provided to the SAFCH though the generosity of the authors and the publisher. A review of this excellent book is to be found in the BOOK REVIEW section of this issue of SAFO. This book can be obtained from: Air Enterprise Publications, PO Box 7745, Newark, DE 19711.)

During the 1930s, the military leaders of Finland realized that the situation in Europe would soon put peace in jeopardy and that it was necessary to initiate a number of arms purchases in preparation for the oncoming war.

After many revisions, the 5-year plan drawn up in 1937 proposed 11 flying squadrons and 4 ground-liaison squadrons totalling 52 aircraft, one sea-liaison squadron with 13 aircraft, 3 long-range operations squadrons totalling 27 aircraft, and 3 fighter squadrons totalling 81 aircraft. Modernization had been begun in 1936, but owing to budgetary restraints only a few aviation units had the proposed equipment by the autumn of 1939. Two of the four ground-liaison squadrons, *Lentolaivue 10* and *Lentolaivue 12*, were operating new Fokker C.Xs while *Lentolaivue 14* had both Fokker C.Xs and old Fokker C.Vs purchased in 1934-35; *Lentolaivue 16* had to make do with completely obsolete Blackburn Ripon IIFs built under licence in Finland at the beginning of the 1930s and Junkers K-43s purchased in 1930-31. The sea-liaison squadron, *Lentolaivue 26*, also operated the obsolete Ripons. Two of the long-range squadrons, *Lentolaivue 44* and *Lentolaivue 46*, were equipped with new Bristol Blenheim Is, while the third squadron, *Lentolaivue 42*, had no aircraft at all. Among the fighter squadrons, *Lentolaivue 24* was equipped with new Fokker D.XXIs and *Lentolaivue 26* with Bristol Bulldog IVAs purchased in 1934; the third fighter squadron, *Lentolaivue 28*, had not yet been formed.

At the outbreak of the Winter War, in November 1939, the basic purchase plan was still largely unfulfilled. The situation was worst in the fighter sector where only one unit had their new equipment at the time the war broke out.

DEPLOYMENT OF FORCES IN 1939

The Finnish Forces arrayed along the border with the Soviet Union consisted of three Army Corps stationed between the Gulf of Finland and Ilomantsi, while the area from Ilomantsi up to the Arctic Ocean was covered by small detachments. The Finnish Armed Forces were commanded by Marshal C.G.E. Mannerheim.

The Air Defence, commanded by Maj. Gen. J.F. Lundqvist, included the Air Force together with the Antiaircraft and the Air Surveillance Troops.

At the outbreak of the Winter War, the Air Defence was subdivided into two Flying Regiments: *Lentorykmentti 2* (2nd Flying Regiment) was equipped with 36 Fokker D.XXIs in *Lentolaivue* (Flying Squadron) 24 and 10 Bristol Bulldogs in *Lentolaivue 26* based at Immola and Raulampi, respectively.

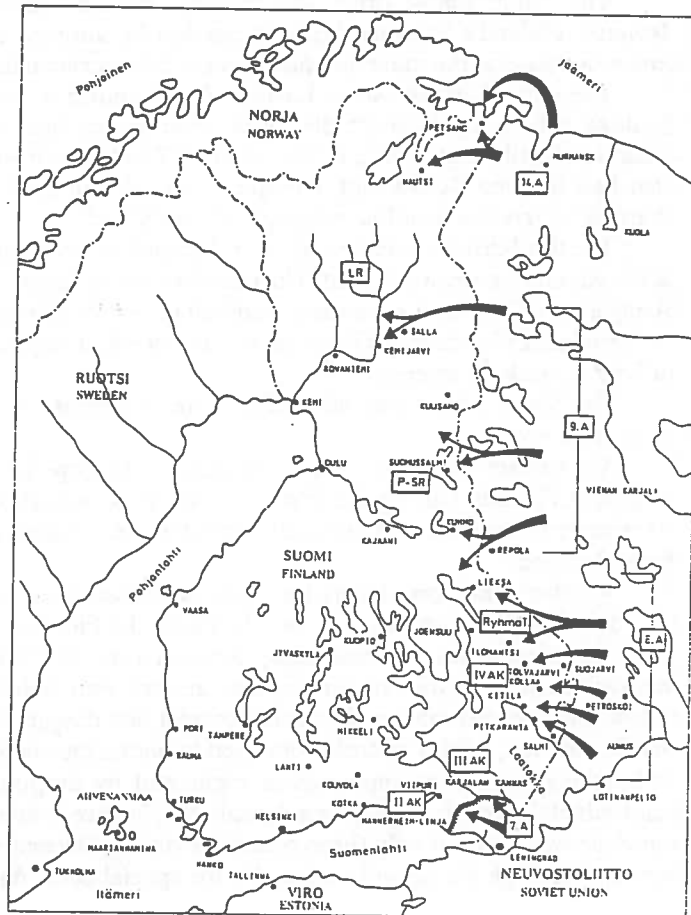
Lentorykmentti 4 (4th Flying Regiment) was equipped with 8 Bristol Blenheims in *Lentolaivue 44* based at Luonetjärvi and 9 Blenheims in *Lentolaivue 46* also based at Luonetjärvi.

The two fighter squadrons were mainly for intercept missions over the Karelian Isthmus. *Lentorykmentti 4* was assigned long-range reconnaissance and bombing duties.

The 2 reconnaissance squadrons belonging to *Lentorykmentti 1* were made subordinate to the Isthmus Army. These were *Lentolaivue 12* with 13 Fokker C.Xs based at Suur-Merijoki and *Lentolaivue 14* with 4 Fokker C.Xs and 7 Fokker C.Vs based at Laikko.

Lentolaivue 12 was mainly used to support the 2nd Army Corps on Western Karelian Isthmus while *Lentolaivue 14* supported the 3rd Army Corps in the eastern parts of the Isthmus. *Lentolaivue 10*, which had received dive-bombing training, remained at *Lentorykmentti 1*'s disposal. The squadron's principle base was Lappeenranta, and it was equipped with 12 Fokker C.Xs. However, a few days after the war broke out, the dive bomber squadron was assigned to the Army's High Command.

Lentolaivue 16 from *Lentorykmentti 1* was made subordinate to the 4th Army Corps. Two of the flights were based at Vartsila and equipped with 8 Ripons. Another flight, equipped with 4 Junkers K-43, was subordinate to Ladoga Sea Defence



and was based at Lahdenpohja, from which it moved to Northern Finland in mid-December.

Lentolaivue 36 was subordinate to the Navy and operated in the Gulf of Finland from its main base at Kallvik (east of Helsinki) using 6 Ripons. In addition, the Navy was supported by two Junkers F13s based at *Mariehamn in land.

At the outbreak of the Winter War, the Finnish Armed Forces possessed some 20 tanks, 425 guns, 2 armored ships, 5 submarines, a number of smaller vessels, and 327,000 men under arms.

At the time the Winter War broke out, the Soviet Union had stationed 18 to 20 divisions, 6 to 7 tank brigades, 2,000 tanks, 2,050 guns and grenade throwers, a great number of different vessels, and about 450,000 troops along the borders with Finland.

The Finnish Air Force had a total of 301 aircraft, of which 114 fighters, reconnaissance planes and bombers were deployed at the front. In addition, 22 aircraft were obtained by requisition. The anti-aircraft units had a total of 122 guns of various sizes.

For its campaign against Finland, the Red Air Force deployed 3,253 aircraft at the beginning of the war. The principle types were Polikarpov I-15bis, I-153, and I-16 fighters; Tupolev SB, Ilyushin DB-3 and obsolete Tupolev TB-3 bombers; Polikarpov R-5 and U-2 reconnaissance planes, and Beriev MBR-2s for sea reconnaissance.

DECEMBER 1939

At the outbreak of the war on 30 November 1939, the Soviet land forces, backed by the Air Force, launched an attack along the whole length of Finland's eastern border. The Soviets attack on three main fronts:

The southernmost drive was centered on the Karelian Isthmus. Finland's Isthmus Army succeeded in stopping the enemy advance at the main defence line, the Mannerheim line.

The second attack was in Eastern Karelia north of Lake Ladoga where the Soviet's 8th Army penetrated into the Pitaranta-Kittila area before it was stopped. The Soviet troops that had reached Kollaa and Tolvajarvi were driven back to Aittojoki where the frontline subsequently stabilized.

The third drive was intended to cut Finland into two parts at the country's narrowest point. The offensive of the Soviet 9th Army in the Kuhmo, Suomussalmi and Salla areas culminated in fierce battles in which the Finns succeeded in either stopping or beating back the enemy.

The Soviet 14th Army advancing from Murmansk was stopped at Nautsi.

Air warfare begun with the bombing of 16 population centers in Finland. During the first few days of the war, about 100 people were killed and over 200 injured in the bombing of Helsinki alone.

Weather conditions during December were extremely unfavorable for air operations. This was lucky for the Finns for it made the effective use of numerically-superior Red Air Force impossible. Also, Finnish reconnaissance aircraft were able to obtain valuable information during the critical first days of the war. In addition, liaison aircraft were used to harass the enemy by bombing Soviet encampments at night and by dropping hundreds of thousands of propaganda leaflets. The dive bomber squadron was used on only three occasions during December because the High Command reserved it for special occasions.

A propitious occasion for the use of the squadron's striking power arose in the eastern Gulf of Finland when a Soviet flotilla, including battleships, attacked a Finnish outpost. However, orders to deploy the squadron came too late and the flotilla was able to leave the area undisturbed. The squadrons that were subordinate to the Navy carried out reconnaissance missions over the Gulf of Finland and the northern reaches on the Baltic, where they protected convoys of merchant-vessels and observed the movements of surface vessels and submarines belonging to the Soviet Baltic Fleet.

From the beginning of the war, the situation northeast of Lake Ladoga became very dangerous as the Soviet 8th Army advanced deep into Finnish territory and threatened to destroy the defenses for the whole front. The Finnish 4th Army Corps had great difficulty repelling the onslaught by a numerically superior enemy. Since *Lentolaivue 16*'s Ripons could not operate safely in this region, the High Command was compelled to assign reconnaissance tasks to *Lentorykmentti 4* whose 17 Blenheims were put to the test as they tried to accomplish the numerous duties given to them.

In mid-December the Finns achieved their first great victory at Tolvajarvi. At the same time, the Air Force was used to support a counterattack by the 4th Army on the Karelian Isthmus; however, this attack proved unsuccessful.

During December, *Lentorykmentti 4* carried out sporadic reconnaissance flights over the Suomussalmi-Raate area. At the end of the month, they participated in the destruction of a whole Soviet division at Suomussalmi. Reconnaissance and bombing sorties were also flown to the Murmansk railway.

Lentorykmentti 2's fighters were active mainly on flights intended to protect the troops and lines of supply for the 2nd and 3rd Army Corps on the Karelian Isthmus.

When the sky was clear, interceptions occurred daily and numerous aerial combats took place. During the course of the month, the Finnish fighters shot down a total of 60 Soviet aircraft.

The Finnish Air Force also suffered considerable losses: 14 aircraft were lost, nine of which were shot down by the enemy while the rest were destroyed for other reasons such as bad weather or Finnish anti-aircraft fire.

The only increase to the Air Force's flying stock during this month were 3 obsolete Fokker C.Vs received from Sweden.

January 1940

The drive of the Soviet 7th Army on the Karelian Isthmus had been halted. In the area between Lake Ladoga and the Arctic Sea, the Soviets has sustained heavy losses. Because of this lack of success, the Supreme Military Soviet decided to employ fresh troops under the command of Army General S.K. Timochenko. The 7th Army was made responsible for the western Isthmus area, while the eastern Isthmus was entrusted to a newly formed 13th Army. At the same time, the Soviet Air Force was strengthened considerably. Both the land and aerial forces northeast of Lake Ladoga were also strengthened. The Finnish reconnaissance squadrons were ordered to unravel the enemy's new plans and troop movements.

The Finnish 4th Army Corps had succeeded in surrounding two Soviet divisions and one tank brigade in the area north of Lake Ladoga. A very peculiar form of warfare ensued, a war of attrition against the encircled enemy (called "mottisota" in

Finnish) which would continue until the end of the Winter War. The reconnaissance aircraft assigned to the 4th Army Corps and the long-range operational aircraft of *Lentorykmentti 4* were given the task of destroying any reinforcements being sent to the surround enemy units, and to intercept their lines of supply. Important ground actions were taking place around Raate on the northern front and in Kuhmo similar actions were being prepared against the encircled Soviet troops. Owing to unfavorable weather and the scarcity of aircraft, these operations supported lightly supported by the Finnish Air Force.

During the first half of January, weather conditions made flying practically impossible. After the middle of the month the skies started to clear but temperatures dropped drastically making flying and servicing the aircraft extremely difficult.

On clear days, the Fokker C.X and C.V were easy prey to Soviet fighters. Therefore, operations were carried out mainly under the cover of darkness. At sea, however, *Lentolaivue 36*'s Ripons carried out reconnaissance missions mainly during the daytime.

In order to intercept the lines of supply of the Soviet troops surrounded northeast of Lake Ladoga, the Finnish High Command transferred the Diver Bomber Squadron, *Lentolaivue 10*, to this area, where it carried out 38 dive bombing missions in a month's time. Also, since some Blenheims belonging to *Lentorykmentti 4* were used in support of these destruction battles, long-range operations could be carried out only on a reduced scale.

The fighters of *Lentorykmentti 2* continued intercepting enemy air attacks behind the frontlines while protecting important population centers and railway lines in the south of Finland. At times, single fighters had to be moved around the country to fend off enemy attacks.

During January 1940, the first 12 Gloster Gladiators purchased from England were received in Finland. However, these did not see combat before February.

Lentorykmentti 4 received 10 new Blenheims purchased from England. More than half of these were destroyed or damaged during the course of January. Nevertheless, the unit still possessed 18 bombers at the end of the month.

The Lapland Group, which was supported from mid-December by only a couple of Junkers K-43s, got its own air unit in mid-January. *Lentolaivue 19*, a unit formed by Swedish volunteers, started to operate on the northern front in the Salla and Kuusamo regions. This regiment had a fighter squadron with 12 Gladiators and a joint-operations flight with 4 Hawker Harts.

During January the Finnish fighter pilots shot down 53 Soviet planes and one observation balloon. Lt. J. Sarvanto established a record by shooting down 6 Russian bombers in only 4 minutes.

The Finnish Air Force lost 10 aircraft, 6 of which were shot down while the rest were destroyed for other reasons. At the end of the month, the total number of operable aircraft was about the same as in the beginning of the war.

FEBRUARY 1940

By the beginning of February, the Red Army's strength had grown to about one million men. On the Karelian Isthmus, 150,000 Finnish troops were opposed by 600,000 Soviet troops.

The expected great Soviet offensive on the Karelian Isthmus started on 11 February and a few days later the Red Army broke through at Summa. During the fierce battles that

lasted many days, often with more than 1,000 aircraft roaring in the air, the Isthmus Army was compelled to retreat to intermediate-defence positions and later, during the last days of the month, heavily pressed by overwhelming numbers of Soviet infantry, tanks and aircraft, they retreated to rear-defence positions along the Vyborg-Tali-Vuoksi line. Reinforcements were hastily transferred to the isthmus from other fronts as far away as Lapland.

At the same time, the destruction of the Soviet troops encircled by Finland's 4th Army Corps continued northeast of Lake Ladoga.

Air operations were increased as weather conditions grew better. The Soviets changed their aerial tactics; bombings of Finnish population centers were reduced while air support to land forces was intensified and aerial operations were also directed against the Finnish lines of supply. Bombers were followed by fighter escorts which often engaged in large-scale dogfights with Finnish fighters deep behind the frontlines.

However, massive bombings of selected population centers were still carried out. Vyborg, for instance, was raided by 350 bombers during one single day, leaving a great parts of the town destroyed.

Finnish reconnaissance aircraft carried out successful aerial photography missions at great altitudes above the Soviet offensive. Other reconnaissance duties in daylight could be performed by fighters only. All squadrons in the isthmus area carried out bombing missions against Soviet encampments and lines of supply. Soviet troops occupying the outlying islands in the Gulf of Finland were also bombed.

Even though the number of Finnish fighters increased considerably in February, it was impossible to beat off completely the massive air attacks by the Soviet Air Force on the Karelian Isthmus. In addition to *Lentolaivue 24*'s Fokker fighters, intercept missions were flown by Gloster Gladiators and new Fiat G.50s belonging to *Lentolaivue 26* and by Morane-Saulnier 406s belonging to the recently formed *Lentolaivue 28*.

The fighters were also kept very busy in protecting Finnish supply lines leading to the main battle area. The demand for fighters was so great that a single fighter regiment received dozens of requests every day and it operated from no less than nine bases scattered all along the front. The intensity of operations was such that interception missions alone accounted for about 2000 sorties during the month, resulting in about 300 aerial combats and the shooting down of 71 Soviet aircraft. Fighter combats were frequent owing to the great number of Soviet fighters escorting bomber formations deep behind the front. During the month, the Soviet fighters carried out 10 raids on the bases of Finnish fighters.

February 1940 brought heavy losses to the Finnish Air Forces: 22 aircraft were shot down and 7 destroyed for other reasons. The obsolete Gloster Gladiator alone accounted for 12 of the fighter shot down.

The most disastrous aerial attack of the whole war took place on the last day of February near Ruokolahti when Soviet fighters surprised Finnish fighters on a frozen lake, destroying on the ground or shooting down 5 Gladiators and one Fokker against the loss of 3 Soviet fighters.

In northern Finland, activity was much less intense. *Lentolaivue 19* continued to intercept Soviet air attacks directed

mainly to Rovaniemi. Eight Soviet planes were destroyed in aerial combats.

During February, the Finnish Air Force received about 60 new fighters and about a dozen new bombers. However, the total number of aircraft in combat duties remained more or less the same as some of these planes were used for training purposes.

MARCH 1940

During the first half of March, weather conditions remained favorable for flight activity. Owing to the critical situation on the Karelian Isthmus, the Finnish Air Force concentrated on attacking Soviet land forces on the isthmus. This was a very difficult task because of the great number of Soviet fighters and antiaircraft guns amassed on this front.

In the first days of March, the Soviet 7th Army started to advance towards Vyborg over the ice of the easternmost part of the Gulf of Finland. At the same time, the Soviet forces stationed on islands in the Gulf started to move over the ice towards the Finnish mainland.

The Finnish Air Force's reconnaissance and combat activities were now directed entirely to the highly-critical Vyborg area. *Lentorykmentti 4* carried out continuous air attacks against Soviet land forces and all available fighters were used for ground attack in the area. Bombs and machine gun fire heavily decimated the Soviet troops advancing over open ice, slowing down their advance considerably. Some 20 Soviet aircraft were shot down in aerial combats over the area. Eight Finnish aircraft were lost in combat and some 10 were badly damaged.

In the last days of the war, 10 Hawker Hurricane I fighters and a few Westland Lysanders were received from England and the first lot of Brewster B-239s purchased from the United States arrived. However, these aircraft did not arrive in time to participate in the Winter War.

The Winter War came to an end on 13 March 1940. As a result of this war, Finland lost a considerable part of its territory, but it did remain independent an independent country.

At the beginning of the Winter War, the Soviet Air Force allocated 3253 aircraft for the campaign against Finland. It is estimated that the number of aircraft was considerably increased during the final stages of the war. In terms of aircraft, the Soviets had almost a 30-fold supremacy over their Finnish counterpart. In spite of all this, the Finnish Air Force succeeded in shooting down 207 Soviet aircraft in aerial combat. Antiaircraft units destroyed an additional 314 enemy aircraft. Thus, the total losses inflicted on the Soviet Air Force during the Winter War amounted to more than 500 aircraft.

Finland's own losses amounted to 74 aircraft, of which 68 were warplanes. 51 aircraft were heavily damaged.

The final result or significance of the aerial warfare waged during the Winter War cannot, however, be assessed only by the number of destroyed aircraft on each side. The most important outcome for Finland was the fact that the Finnish Air Force was able limit the Soviet Air Force's offensive activity to a significant degree.

wants&disposals-wants&disposals-wants&disposlas-wants&disposlas-wants&disposlas-wants&disposals-wants&disposals-wants&disposlas

"Can anyone in the SAFCH provide information on the use of military Fokker aircraft in Romania? Romania bought 50 Fokker D.11 in 1925 and some seem to have served well into WWII, but data are scarce. IN addition, the second prototype Fokker D.16 (c/n 5168) was sold to Romania in 1930. This aircraft was built for the Dutch LVA and test flown in February 1930 with serial 276. Fokker was permitted by the Ministry of Defense to demonstrate it in Romania for a fighter competition in August/October 1930. Fokker archives mention performance tests in August 1931 by LT Parvulescu. This plane remained in Romania and Fokker delivered a replacement to the LVA (also 276) in 1931. Any details on the fate of the aircraft in Romania are welcome.

"In addition, I would like to know if anyone in the SAFCH is a specialist on aero engines. I am collecting data on the Dutch Douglas DB-8A/3N

and would like the P&W engine numbers of these aircraft."

Frits Gerdessen (SAFCH #12), Fijnscheerderstraat 12, NL-4204 ES Gorinchem, THE NETHERLANDS.

"Disposal: Aircraft Profiles No.1 thru No.262, missing No.225 (Me 163 Komet) and No.246 (Spitfire MkXIV & XVIII); in excellent condition. Contact: Augie Blume, Box 190, San Anselmo, CA 94960."

"I would like to correspond with anyone interested in the Swedish Air Force, particularly in Saab aircraft and aircraft license-built in Sweden. I'm particularly interested in information on the Draken and Viggen."

If you are desperate for information on the IDF/AF, or if you would be satisfied to look at the pictures, this may be a book for you. Otherwise, I suggest waiting for an English translation, which is bound to turn up before long.

Leif Hellstrom (SAFCH #786), Servituts-vagen 3, S-145 59 Norsborg, SWEDEN.

Jiri Novy (SAFCH #925), kpt. Nalepky 273, 250 70 Odolena Voda, CZECHOSLOVAKIA.

"One of our SAFCH readers asked me to arrange for him to get a subscription to L + K that would be transhipped through me. This I have done, but I seem to have forgotten the name of the person who made the request. If you asked for L + K, please let me know immediately for I have the first four issues of 1990 ready for shipment. I assume that a subscription price of \$36 (\$1.50 per issue for 24 issues) would be fair, but if you think this is ridiculously low, I will accept more for our Czech friend."

Jim Sanders (SAFCH #1), 27965 Berwick Dr., Carmel, CA 93923.

SKY TRAILS: THE LIFE OF CLYDE W. ICE, Sedgwick. 6" x 9" perfect bound paperback, 33 photos, 184 pages. \$12.50 + \$2.00 shipping. Rhonda Coy Sedgwick, 1159 State Highway 450, Newcastle, WY 82701.

(Continued from page 52.)

Squadrons 69, 100, and 103 are presumably transport and/or light aircraft units. Perhaps some SAFO reader will undertake to translate some of the tables.

The photos are, unfortunately, badly printed, but there are a number of very interesting ones, not previously seen in print.

AIR ACTION, 6 boulevard du General Leclerc, 92110 Clichy, France. Distributed in the USA by Western Aviation Distributing Co., 201 Sansome St., Suite #503, San Francisco, CA 94104.

In any list of the best aviation magazines in the world, AIR ACTION would have to rank near the top. And, if the one sample I've seen is representative, it will also rank high in small-air-force interest. The text is in French, but the photo captions are translated into English.

The January 1990 issue (#13) contains 68 pages of text and color photos printed on glossy paper that allows high-quality reproduction of color photos. Articles in this issue include "Tenters Udara Diraja Malaysia", a 28-page coverage of the Royal Malaysian Air Force that includes 44 color photos of aircraft from the Scottish Pioneer & Twin Pioneer and de Havilland Heron, to the Northrop F-5, Aeromacchi MB339A, and Pilatus PC-7A. Of particular interest is a HU-16B Albatross in an attractive blue and white color scheme.

"Afghanes Prises de Guerre" is a 4 pages article with 4 photos of an Afghan MiG-21bis '957' and Su-22M-4 '804' in Pakistan. "Skyhawks en Israel" contains 5 color photos. "Peenemunde: JFG 9 'Heinrich Rau'" has 12 color photos of East German MiG-23 and Mi-8. "La Force Aerienne Neerlandaise" is an 8-page survey of the present-day Dutch Air Force with 12 color photos. Finally there are 5 pages of kit reviews.

Review copy provided by Jean-Paul Garcia (SAFCH #573).

REPULES. This small Hungarian aviation magazine has been around for quite a while, but I must admit that it contains little of interest to the reader unfamiliar with the Hungarian language. Issue 89/5 consists of 20 pages with marginally acceptable reproduction of photos. It's hard to evaluate the article with any comprehension of the

language but "Legi Akrobatika" includes a photo of a Hungarian Zlin 526AFS, and "Rakosmezei Tragedia 1914" includes 3 photos of an early Hungarian aircraft.

Review copy courtesy of T.P. Dobrowiecki (SAFCH #948).

"I've obtained some recent issues of a new magazine published in Yugoslavia: Yuvam-Aeroplan. It appears six times a year, each issues containing between 24 and 32 pages in the Serbo-Croat language, and it costs US\$3.50 an issue or US\$21.00 for a year. This magazine has been publishing since 1986, but I do not know is back issues are available. The address quoted in the magazine is: Obalni Letalski Center, 66333 Secovlje, YUGOSLAVIA, but I have failed to get an answer from this address.

"The magazine contains plenty of b/w photos, whose reproduction is generally somewhat grey, and colour covers. A brief summary of the contents follows. (Unless I mentioned otherwise, or it is obvious, all articles and drawings refer to a/c in Yugoslav AF service.)

"1/89: Front cover colour side view of EDA-1 (first Yugoslav aircraft) and an 'Orao'; 2 pages summarizing Yugoslav aviation; 5-page modelling article on the DC-10 in JAT service including 2 pages of drawings of colour schemes; 4-page modeling article on the L-13 Blanik glider with 4 drawings of colour schemes; 3-page chart giving FS/Humbrol/MoLak colour equivalents; 4 pages on the Fairchild A-10; 4 pages as part 7 of a feature on Yugoslav aircraft markings; inside back cover colour side-views drawings of AVIA FL-3, AT-6 Harvard, Bf 109G-10, & Ju 87B; outside rear cover colour photo of JAT DC-10.

"2/89: 5-page modelling article on the MiG-29 with 3 pages of drawings of colour schemes; 6-page modelling article on Harvard with 2 pages

of drawings of colour schemes; 10-page article on the Yugoslav aviation museum including a comprehensive list of contents; part 8 of the series on Yugoslav aviation markings (8 pages); inside rear cover colour side-views of Po-2, Fieseler Fi 167, DH Tiger Moth, and Bucker Jungmann; outside back cover colour photo of MiG-29.

"3/89: Front cover colour side-view of MiG-21 (2 a/c) and Phoenix C.I.; 2-page article on Yugoslav aircraft 1918-1919; 10-page modelling article on the MiG-21 including 5 pages of drawings of colour schemes; 4-page modeling article on Augusta-Bell AB-212 including 2 pages of civil colour schemes; 2-page article celebrating the jubilee of JAT including one page of drawings of DC-3/C-47 YU-ABJ; part 9 of series on Yugoslav aircraft markings (4 pages); inside rear cover colour side-view of 2 partisan a/c Caproni Ca 311M and a 'Flit' (?) seaplane.

"5/89: Front cover colour side-view of P-47 and civil PZL Wilga; 11-page modelling article on P-47 including 4 pages of drawings of colour schemes; 5-page modelling article on the PZL Wilga including 2 pages of civil schemes; 4-page article on the Czech Avia S-92 including one page of drawings of colour schemes; part 10 of the series of Yugoslav aircraft markings (6 pages on airliners).

"6/89: Front cover colour side and plan view of MiG-29 and side-view of Bf 108; 12-page modelling article on the MiG-29 with many drawings of colour schemes (a follow on to issue 2/89); 11-page article on the Bf 108 including 4 pages of drawings of colour schemes; one page of very grey photos from the Brnik Airshow 1989; part 11 of the Yugoslav aircraft markings series (2 pages of civil a/c.)"

Tony Morris, Ashbourne House, Marsh Gibbon, Bicester, Oxon OX6 0HW, ENGLAND.

(Continues from page 37.)

EDITORIAL 1: You may have noticed that our series commemorating the small air forces that fought in WWII is beginning to fall behind my stated goal of publishing articles on the 50th anniversary of these events. This failure to meet my original objective has been caused by the large number of excellent articles that have been received. I could fill each issue with nothing but articles on WWII, but then there wouldn't be room for anything on jets or biplanes. Rather than give up this variety, I have decided to hold some articles for later publication. For example, the story of the Finnish Air Force in the Winter War is continued in this issue, the Norwegian story will appear in the July SAFO, and still be published are several great articles on the Polish Air Force and their aircraft. Many thanks to everyone who has contributed articles. If you were planning to do an article, don't stop. I promise that all article submitted will be published sooner or later.

EDITORIAL 2: This issue is the first SAFO to be published using a "desk-top publishing" system. I'm just a beginner at this,

so there are probably a lot of errors and "white space". However, this issue contains more information per page than I was able to obtain with the old "cut-and-paste" technique. Please let me know how you like this new format.

CORRECTIONS: In the article on the Biafra Baby in SAFO #53, the editor neglected to make the corrections submitted by the author: the FSS95 references for the colors used on these aircraft should be: Dark Green 14036, Grey Green 14159, and Light Gray 17722.

The author of the book on the Swedish Mustangs assures me that the publisher did a outstanding job in reproducing the color photos. However, many photos were some 40 years old and some of the originals did show their age.

In this same issue, the review of the book on the Pakistan Air Force was written by Leif Hellstrom and not by Dan Hagedorn.

My sincerest apologies to Leif Hellstrom who was the unintentional object of these mistakes.

MODELING THE ISRAELI MYSTERE

For the purpose of this review of the Heller kit of the Mystere, I basically used the kits parts. Not all of us are trophy-winning experts, and some of us (whisper it softly) even like making kits "from the box".

First, decide if you want to mount the two-part canopy in the open position. This slid back in the manner of the Hunter and, if shown open, some material must be removed from the spine behind the cockpit. The plastic will become perilously thin here and it's wise to anticipate this by backing this area with Milliput before assembly - adding also some nose weight not mentioned in the instructions.

I chose to add a cockpit and a better seat using parts from a Heller Ouragan kit which more closely resembled the original French seat. (Some French aircraft were later retrofitted with a version of the Martin Baker MkIV.) French cockpits of this period were generally semi-glass black but a very dark grey like Humbrol's "Panzer Grey" looks better in this scale. With a closed canopy one could get away with the kit seat - alleviating the 'black hole' effect with a suitable pilot. As given, the canopy is only the 'glassware' and there is a considerable section of framing to the rear which will need adding. I also found the front part with its pronounced step not very satisfactory. The real answer is a moulded canopy and happy I understand Aeroclub are doing one. (Editor note: Aeroclub has done a canopy and white-metal landing gear legs for this kit.)

Construction was relatively trouble-free. True, the parts are not a perfect fit especially the wings and nose ring and a lot

of detail needing filling or reducing. One thing to watch for are sink marks, particularly on the wings and opposite the prominent 'plug' on the inside of the cockpit, but there's nothing beyond the abilities of the average modeller. (A tip to making Milliput set quickly is to leave the model on the hot water tank - but keep an eye on it!)

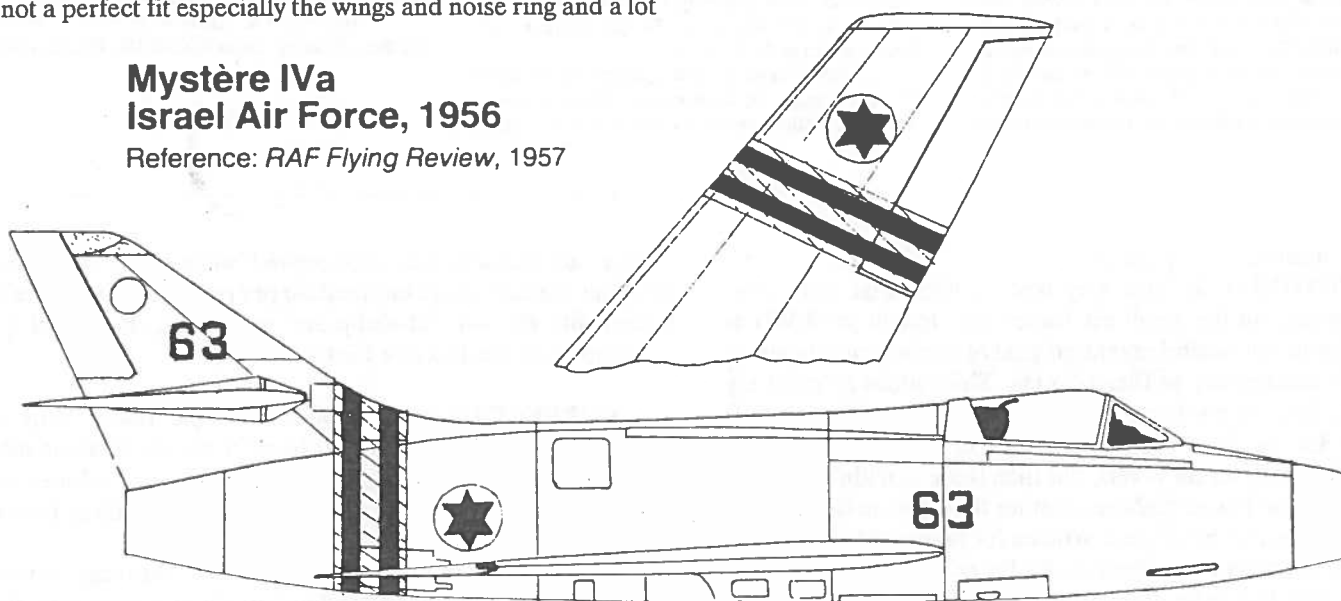
The brake-chute housing will have to be 'beefed up'. (Note that this was not fitted to some early aircraft such as those at Suez.) I made use of a dead Sidewinder, but it should really be more substantial than this. Undercarriage parts and doors are rather crude but usable although the mainwheels are undersize. Two things I think must be added are the rectangular forward undercarriage door (usually closed - so you can scribe this in) and the landing light on the nosewheel leg.

Early jet engines were thirsty and almost always wing tanks were carried on the inboard stations. Probably because of limited space on the sprue, two minute tanks are included in the kit, but they don't really represent any normal store and are not worthy of serious consideration. The only source for the correct items would be an Italeri or Heller Etendard but a very fair representation can be made by shortening Phantom wing tanks and adding the characteristic Dassault 'H' tail.

(Editor's note: This article, written by Mike Purchase, was originally published in the IPMS-MAGAZINE. It is reprinted here with the kind permission of the author and IPMS-UK.)

Mystère IVa Israel Air Force, 1956

Reference: *RAF Flying Review*, 1957



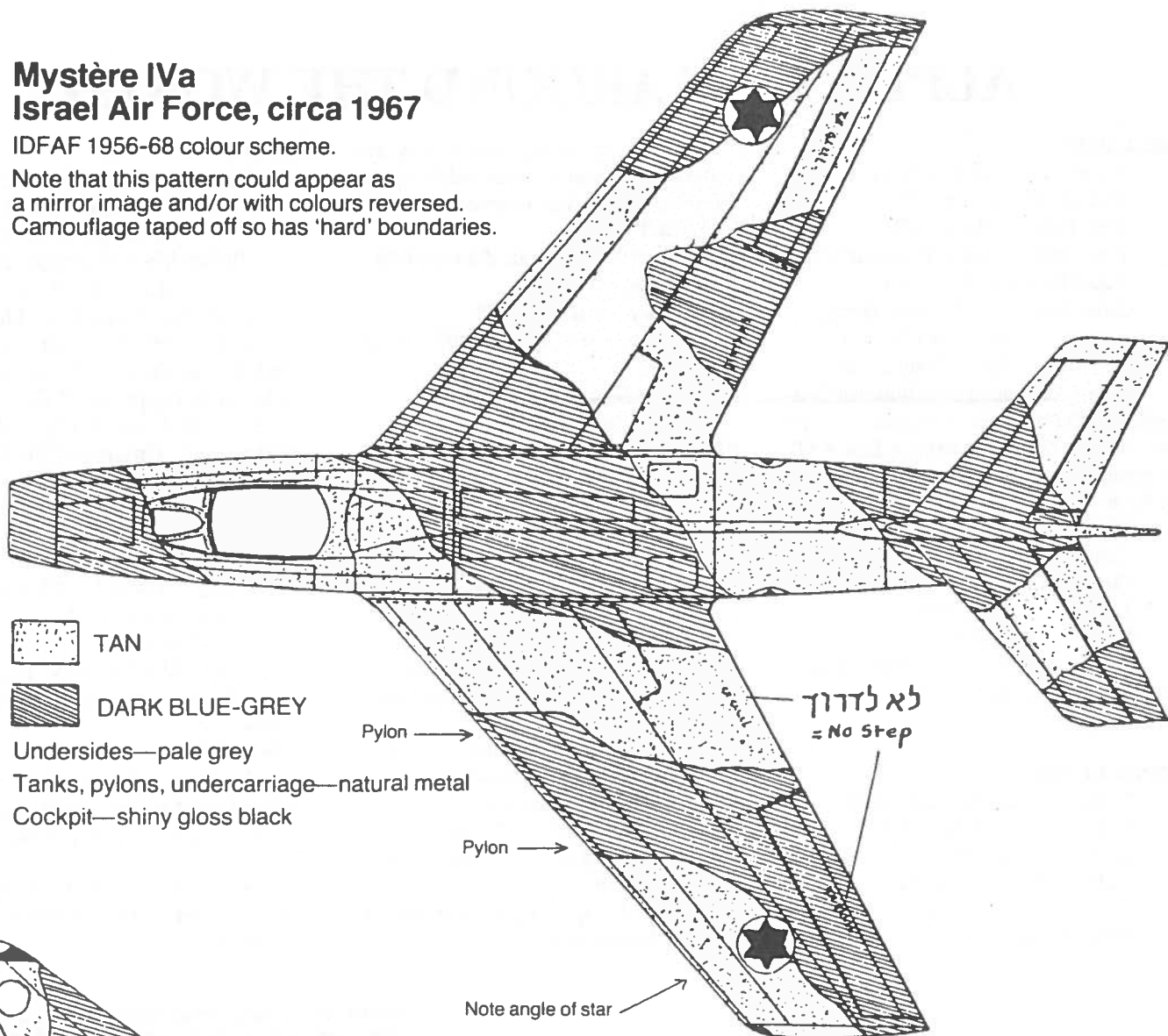
ABOVE: Aircraft Natural Metal with Light-Grey fin aerial panel and French stencils. No drag chute pod. Precise dimensions of Yellow/Black campaign stripes uncertain, as in practice they were chalked off and rather roughly applied—design as shown is typical. Aircraft may have belonged to 101 Squadron.



Mystère IVa Israel Air Force, circa 1967

IDFAF 1956-68 colour scheme.

Note that this pattern could appear as a mirror image and/or with colours reversed.
Camouflage taped off so has 'hard' boundaries.



TAN

DARK BLUE-GREY

Undersides—pale grey

Tanks, pylons, undercarriage—natural metal

Cockpit—shiny gloss black

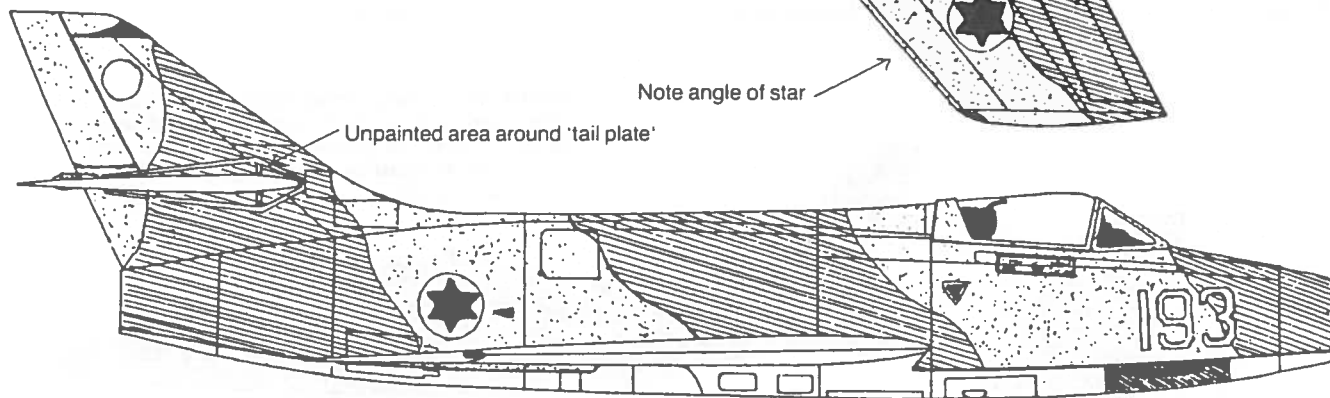
Pylon

Pylon

לא לזדוּך
= No Step

Note angle of star

Unpainted area around 'tail plate'

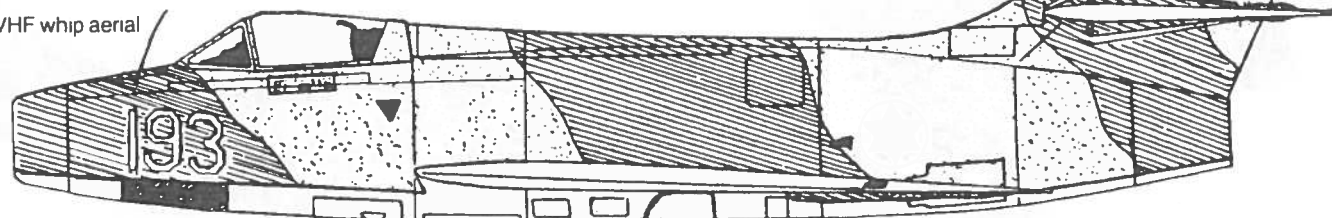


Anti-glare inboard



Fin aerial or whole of
fin cap black or grey

VHF whip aerial



Blast panel black

ALPHA JETS AROUND THE WORLD

BELGIUM:

Number of aircraft delivered: 33
Codes: AT-01 to AT-33
First flight: 20 June 1978
First aircraft built in Belgium: 2/7/80
Base: Brustem-St. Trond
Squadrons: 7th "Cocotte Rouge"
9th "Cocotte Verte"
11th "Chauve Souris"

Notes: Produced in Belgium at Gos-selies; AT34 a flight simulator; E type with some differences; Martin Baker Mk 10 ejection seat; gyroscopic central.

TOGO:

Number of aircraft delivered: 5
Codes: 5V-MBA to 5V-MBE
Order: May 1977
Delivery: August 1981
Base: Lome-Tokoin

Notes: E export type; enlarged dorsal spine to house navaid antenna; double fuel circuit.

IVORY COAST:

Number of aircraft delivered: 7
Codes: TU-VCA to TU-VCG
Order: October 1977
Delivery: First 6 1980-81
Last one 1983
Base: Bouake

Notes: A second batch of 6 were ordered but aircraft were sold to Qatar after the option was dropped.

MOROCCO:

Number of aircraft delivered: 24
Codes: 225 to 249
Order: February 1978
Delivery: From May 1979 to October 1981

Base: Meknes
Notes: H type.

NIGERIA:

Number of aircraft delivered: 24
Codes: 1 batch NAF-450 to -461
2nd batch unknown
Order: December 1978
Delivery: 1st batch 198/82
2nd batch 1983

Base: Lagos
Notes: E export type; built by Dornier; ground crews trained in Germany.

QATAR:

Number of aircraft delivered: 6
Codes: QA-50 to QA-55
Order: December 1979
Delivery: 1st batch (3) October 1980
2nd batch (3) March 1981
Base: Doha
Notes: E export type; originally ordered by Ivory Coast.

EGYPT:

Number of aircraft delivered: 60
Codes: MS-1 3501 to 3530
MS-2 3601 to 3630
Order: MS-1 November 1982
MS-2 June 1983

Base: Air Academy at Bilbeis

Notes: First 4 of each type built in Toulouse in France; all others built at Helouan in Egypt; MS-2 also known as NGEA; MS-1 are E type; MS-2 is a variant with Thomson-CSF TMV-630 laser ranger and integrated nav-attack system.

CAMEROON:

Number of aircraft delivered: 6
Codes: TJ-XBU to TJ-XBZ
Order: January 1981
Base: Douala

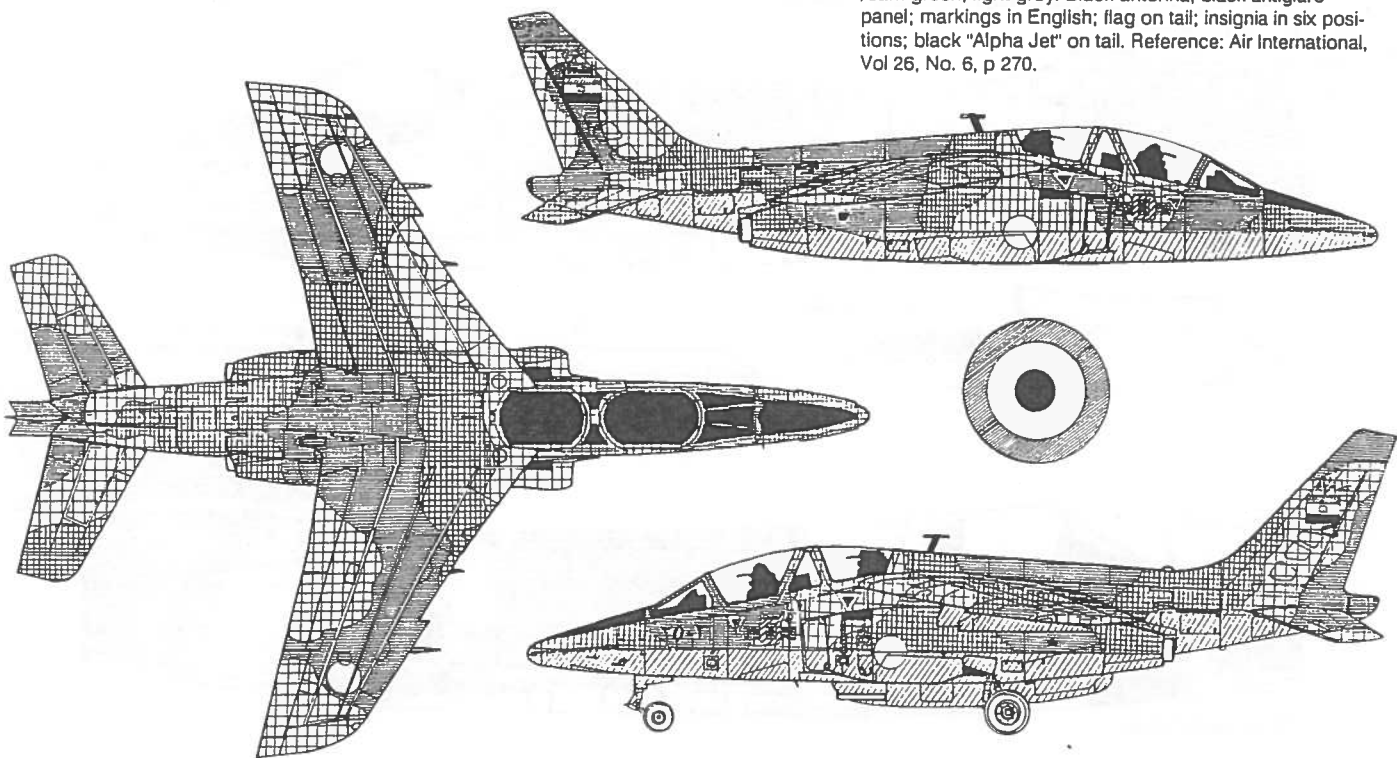
Notes: MS-2/NGEA; one aircraft crashed and destroyed (details unknown).

PORTUGAL:

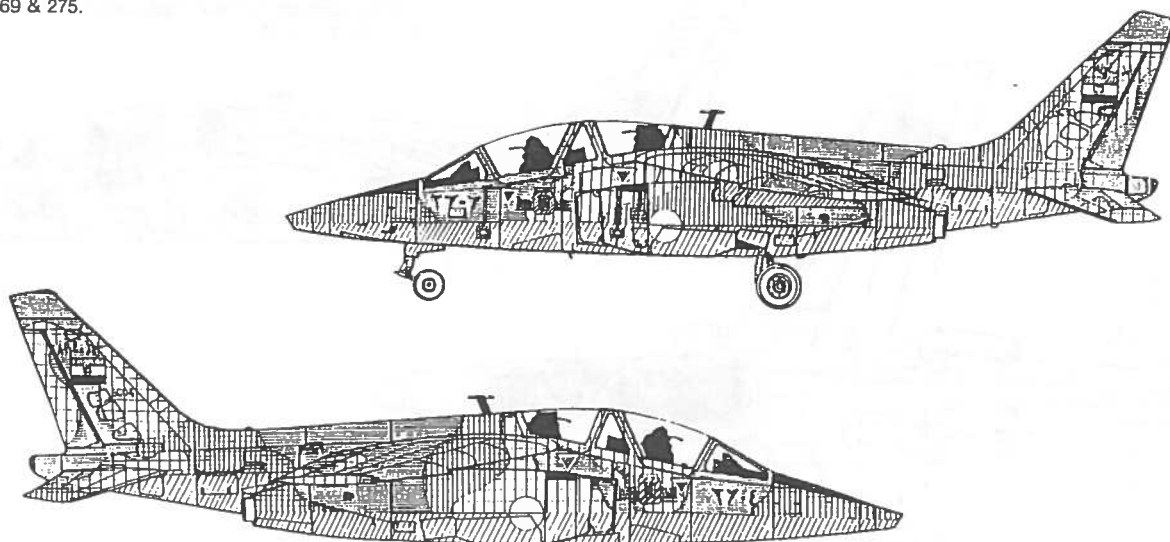
It seems that some Alpha Jets were ordered by the Portuguese government to take the place of the T-33 and T-38.

Hubert Cance (SAFCH #809), 56 Bd. E, Lintlilac, 15000 Aurillac, FRANCE

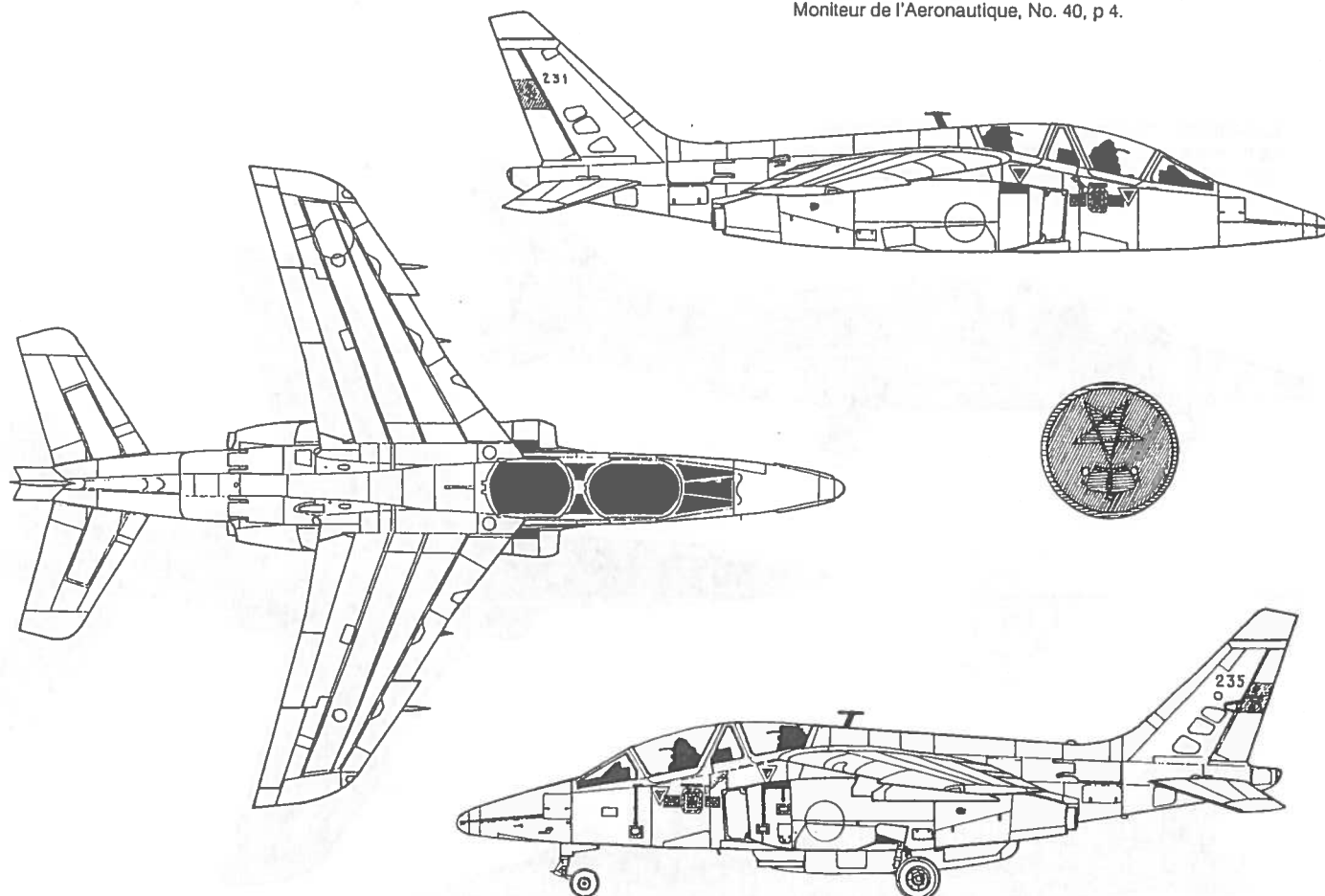
EGYPT: MS-1 serial unknown. Colors: Sand/chocolate /dark green; light grey. Black antenna; black antiglare panel; markings in English; flag on tail; insignia in six positions; black "Alpha Jet" on tail. Reference: Air International, Vol 26, No. 6, p 270.



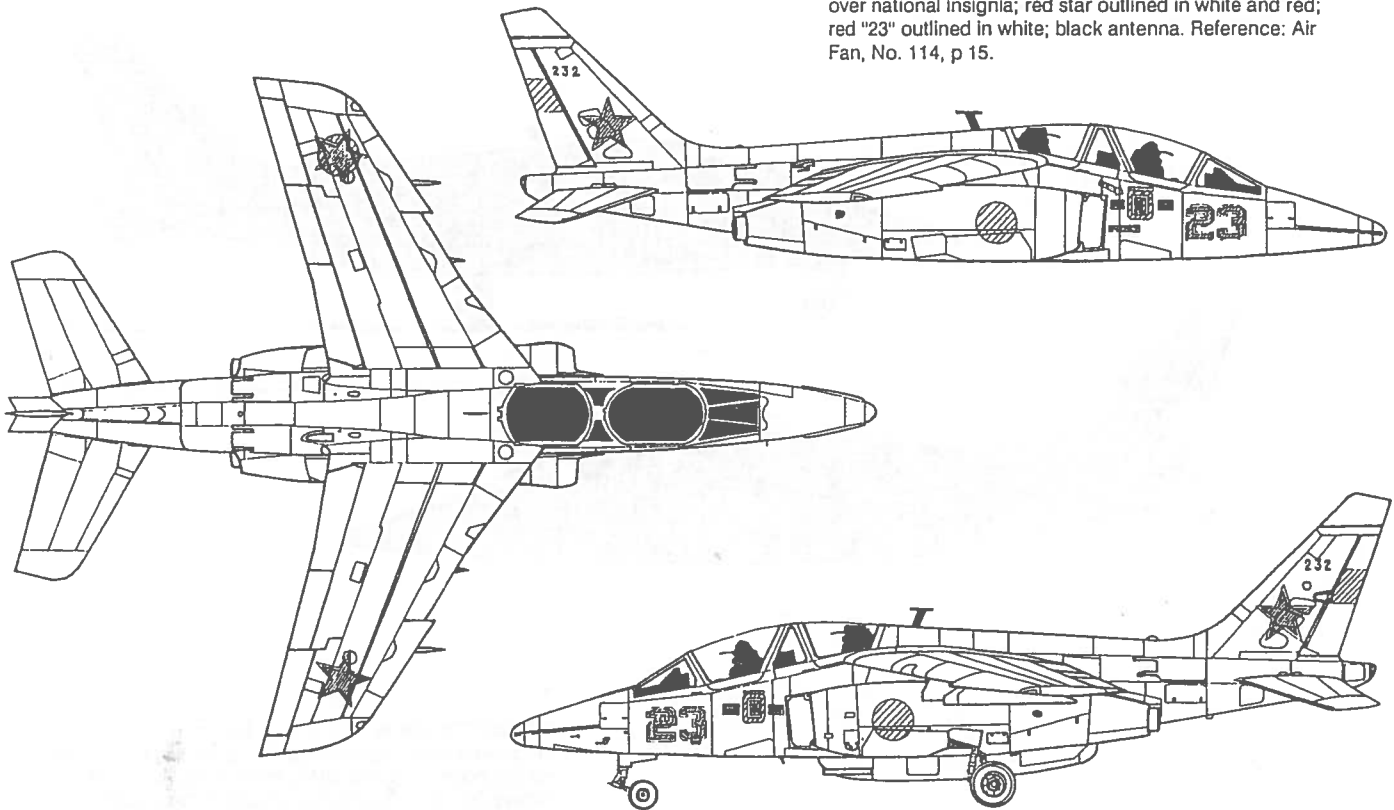
EGYPT: MS-2 '3630' & '3604'. As above, As above, except with addition of black serial on tail. References: Le Fanatique de l'Aviation No. 170 p 53; Air International, Vol. 26, No. 6 p 269 & 275.



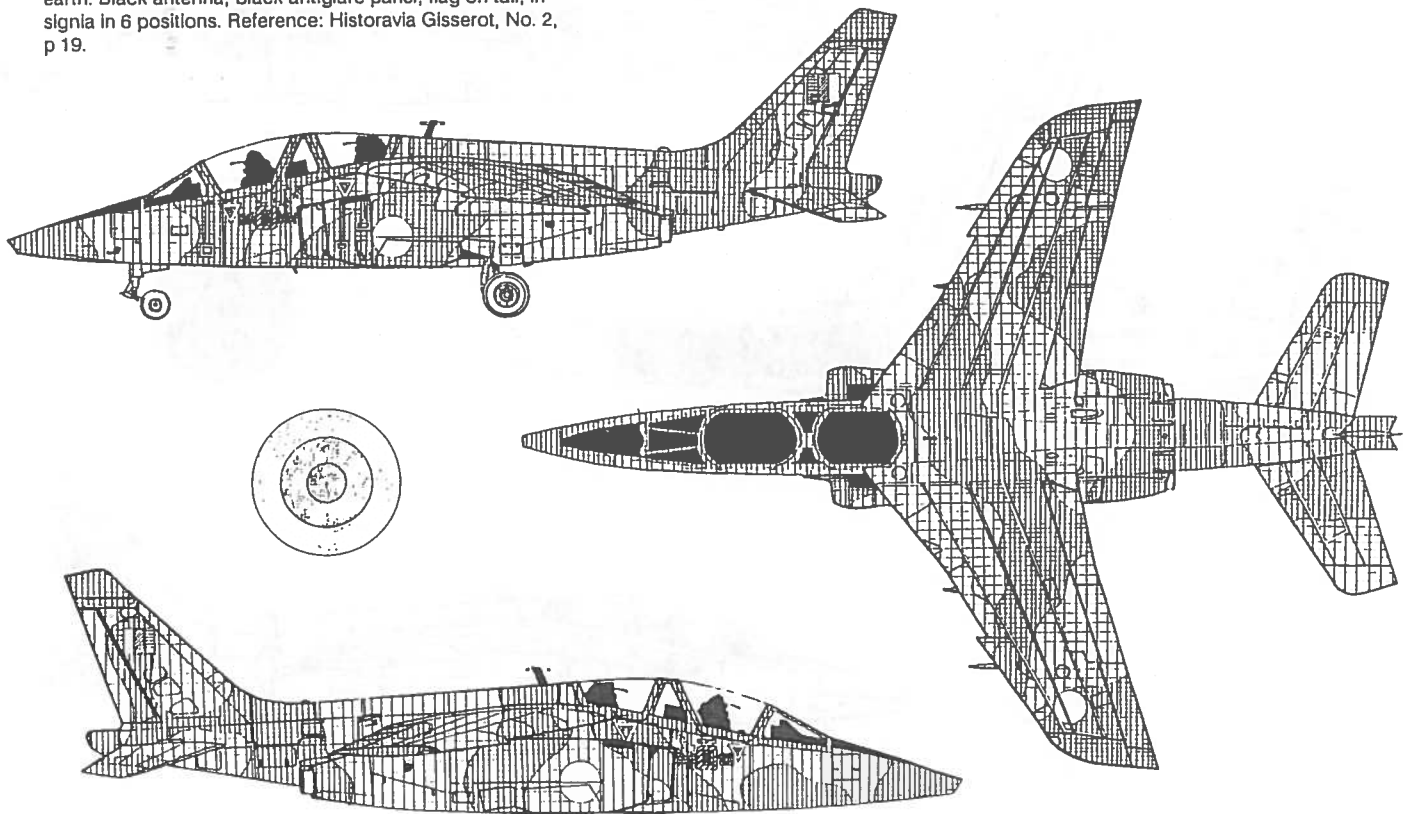
MOROCCO: '235' & '231'. Colors: Natural metal. White nose; black antenna; markings in English; flag on tail; insignia in 4 positions (USAF style). References: Avions de Guerre, No. 48, p 955; l'Encyclopedie de l'Aviation No. 32; Air International, Vol. 20, No. 2; MPM No. 117 p 45; Le Moniteur de l'Aeronautique, No. 40, p 4.



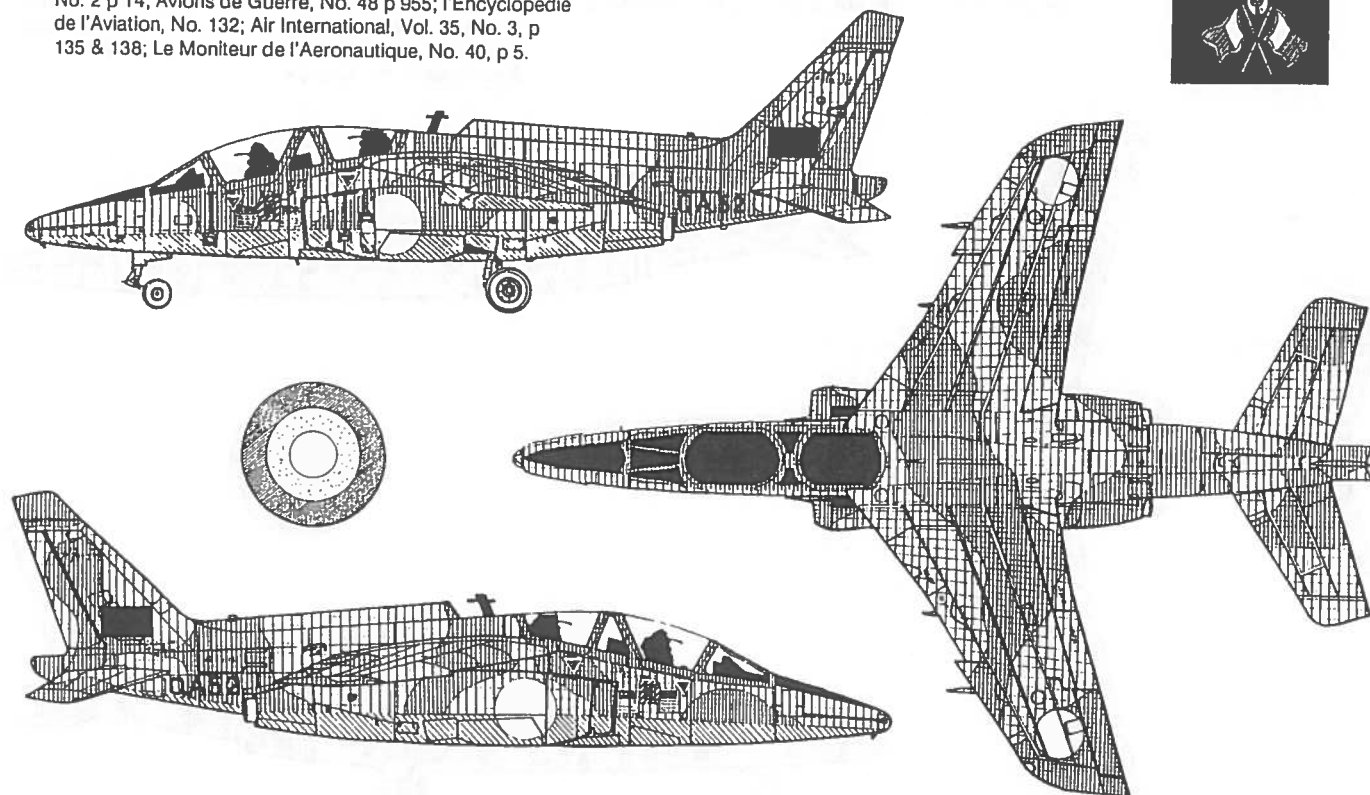
MOROCCO: '232'. Aircraft as it appeared in a James Bond movie. Colors: Natural metal. White nose; grey patches over national insignia; red star outlined in white and red; red "23" outlined in white; black antenna. Reference: Air Fan, No. 114, p 15.



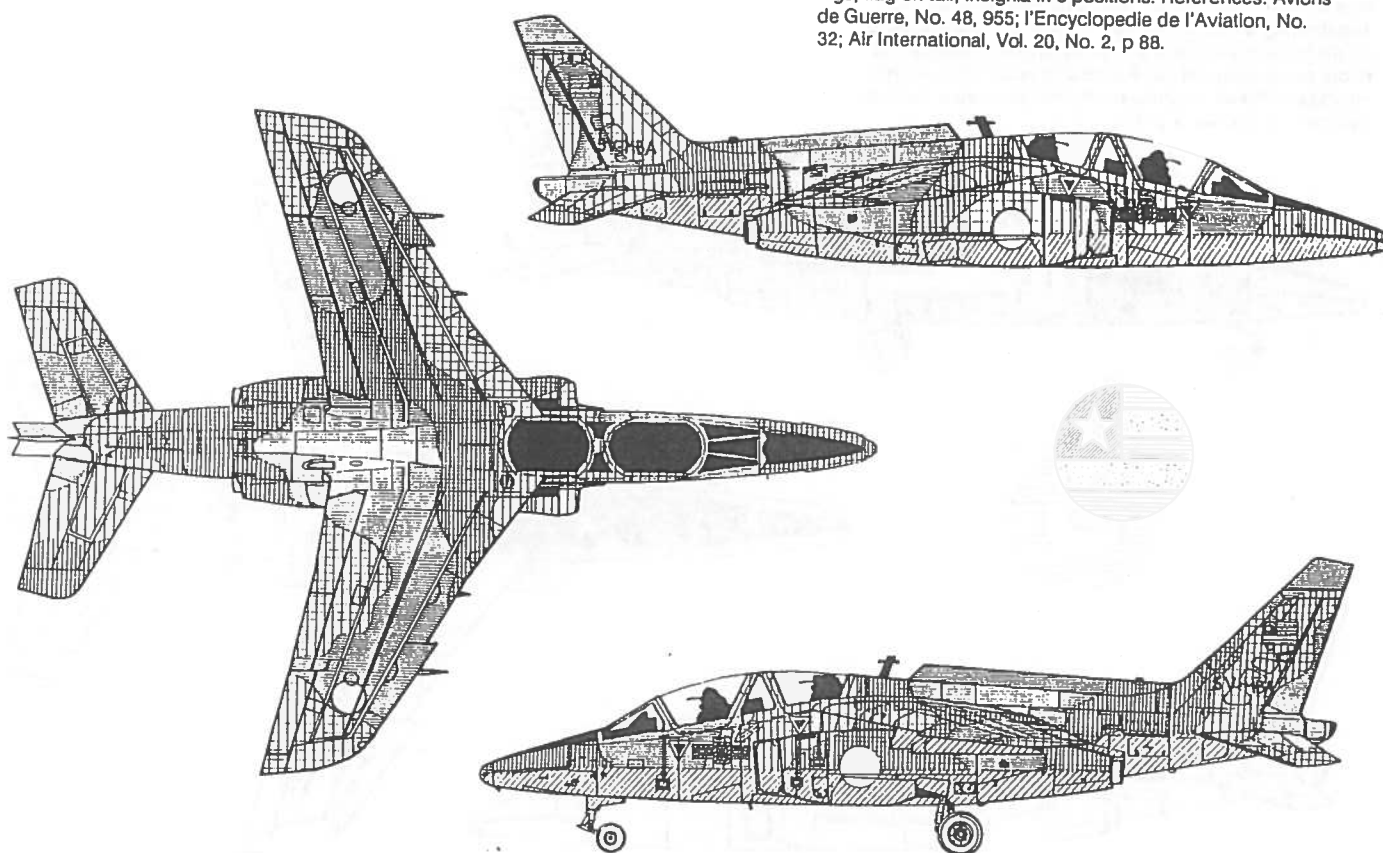
CAMEROON: MS-2 serial unknown. Colors: Sand/dark earth. Black antenna; black antiglare panel; flag on tail; insignia in 6 positions. Reference: Historavia Gisserot, No. 2, p 19.



QATAR: 'QA-52'. Colors: Sand/dark earth; medium blue. Black antenna; black antiglare panel; markings in English; flag on tail; insignia in 6 positions; black "Alpha Jet" on tail; black "52" on tip of nose. References: Historavia Gisserot No. 2 p 14; Avions de Guerre, No. 48 p 955; l'Encyclopedie de l'Aviation, No. 132; Air International, Vol. 35, No. 3, p 135 & 138; Le Moniteur de l'Aeronautique, No. 40, p 5.

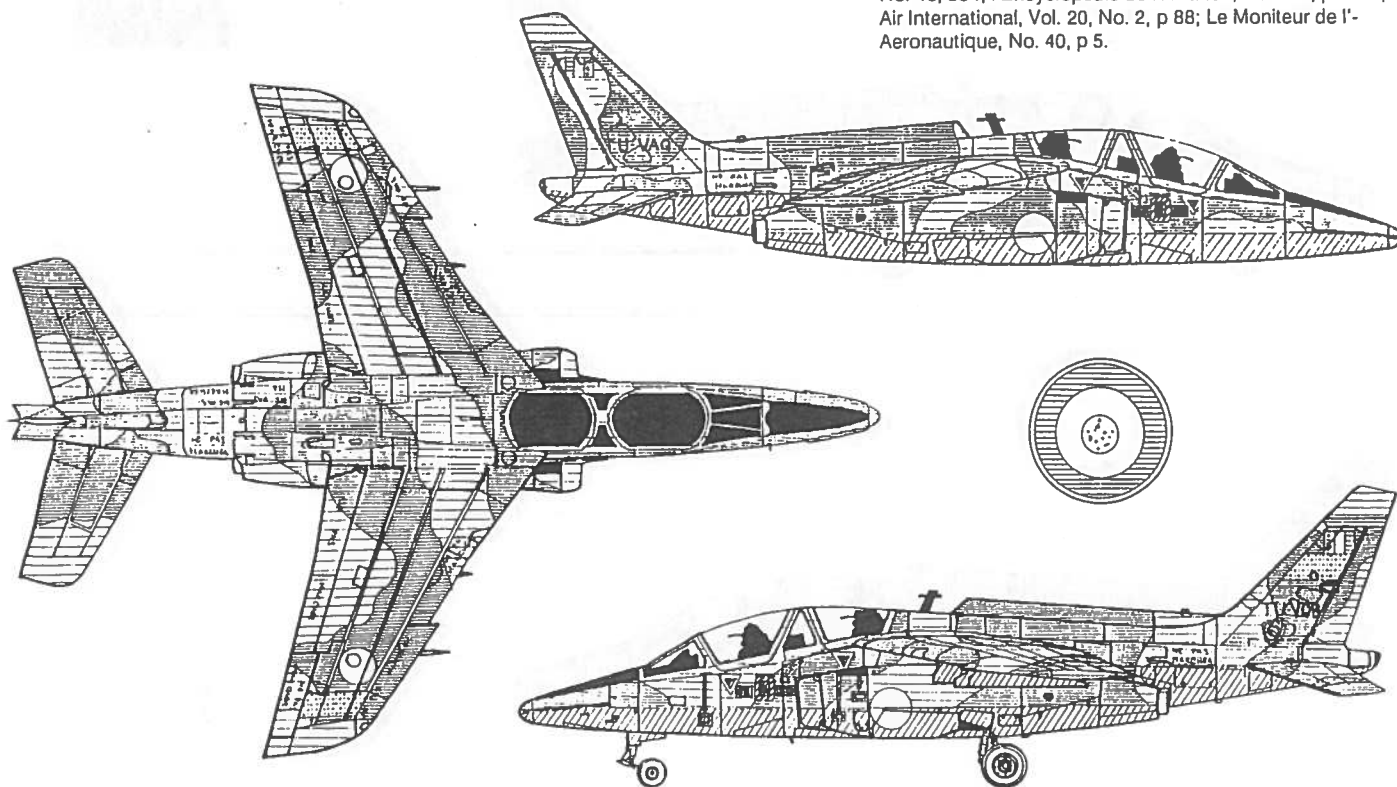


TOGO: '5V-MBA'. Colors: Dark earth/ green/sand; light grey. Black antenna; black antiglare panel; standard markings; flag on tail; insignia in 6 positions. References: Avions de Guerre, No. 48, 955; l'Encyclopedie de l'Aviation, No. 32; Air International, Vol. 20, No. 2, p 88.

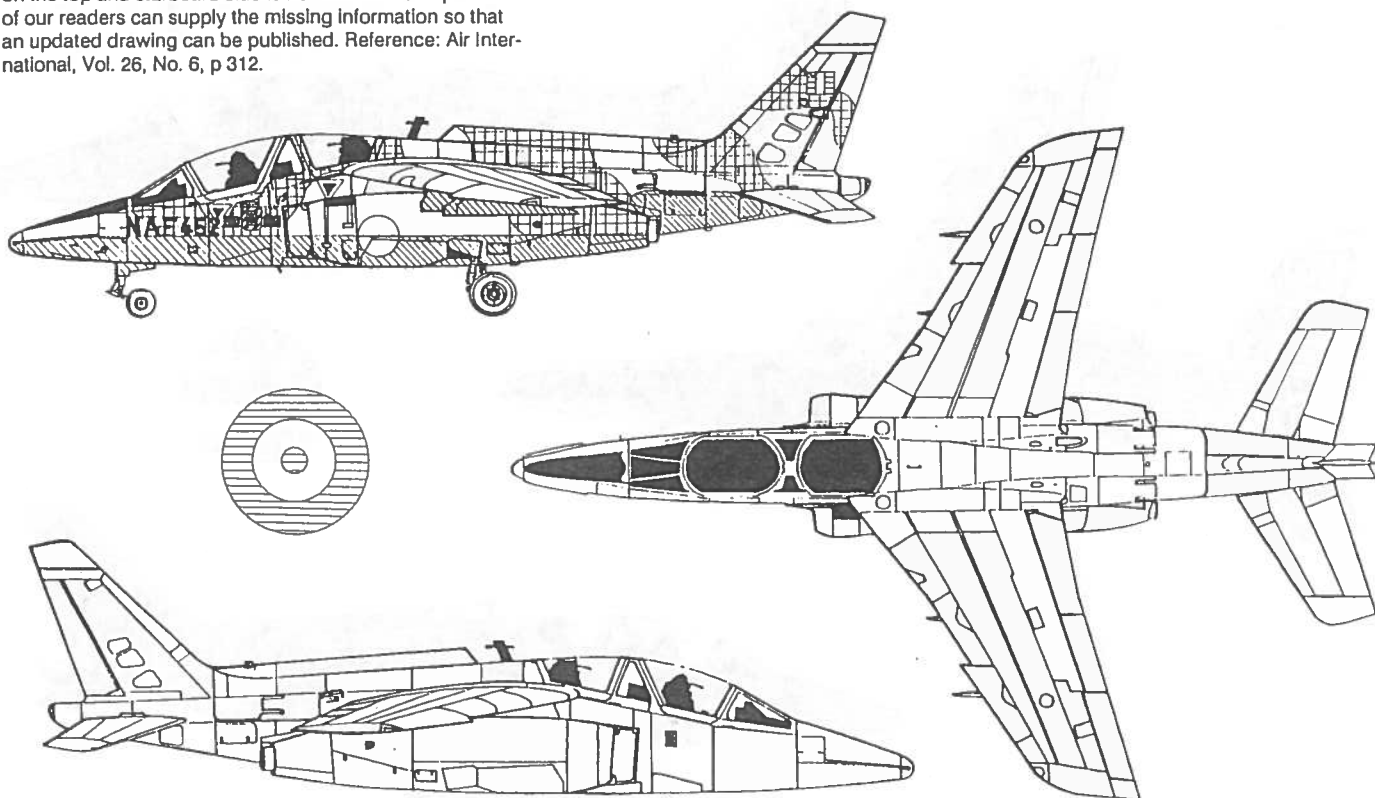


IVORY COAST: 'TU-VCB' & 'TU-VAG'. Colors: dark green/light green; light grey. Black antenna; black antiglare panel; markings in French; flag on tail; insignia in 6 positions; day-glo markings of tail and wings of TU-VCB; blue badge outlined in yellow with something that looks like a

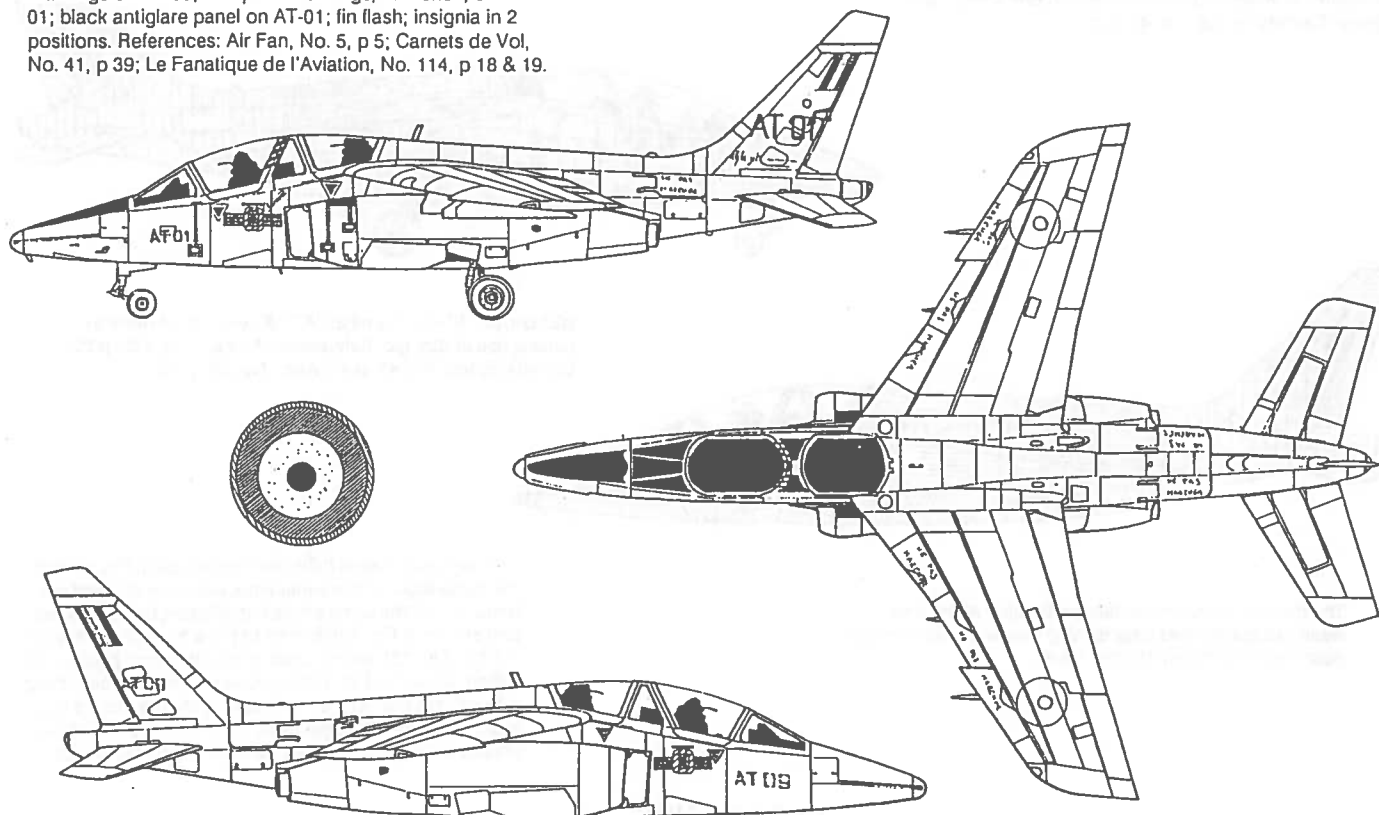
snake's head in orange. Note: In some sources, the camouflage is given as green and khaki or green and grey. The drawing is based on a color photograph in "Le Moniteur ..." and can be considered to be correct. References: Historavia Glisserot, No. 2, p 14; Avions de Guerre, No. 48, 954; l'Encyclopedie de l'Aviation, No. 135, p 2682; Air International, Vol. 20, No. 2, p 88; Le Moniteur de l'Aeronautique, No. 40, p 5.



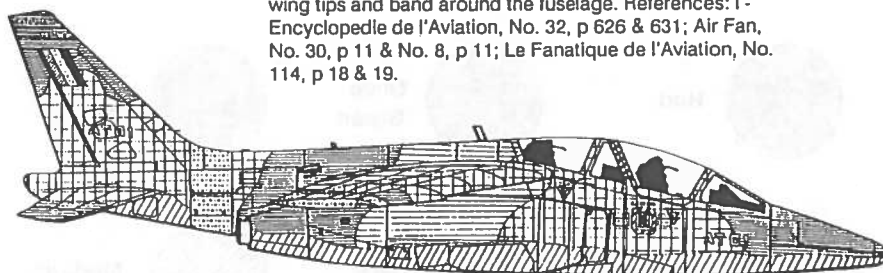
NIGERIA: 'NAF-452'. Colors: Sand/ green/dark green; medium blue. Black antenna; black antiglare panel; markings in English; flag on tail; insignia in 6 positions. Note: The drawing is incomplete because the camouflage pattern on the top and starboard side is not known. Perhaps one of our readers can supply the missing information so that an updated drawing can be published. Reference: Air International, Vol. 26, No. 6, p 312.



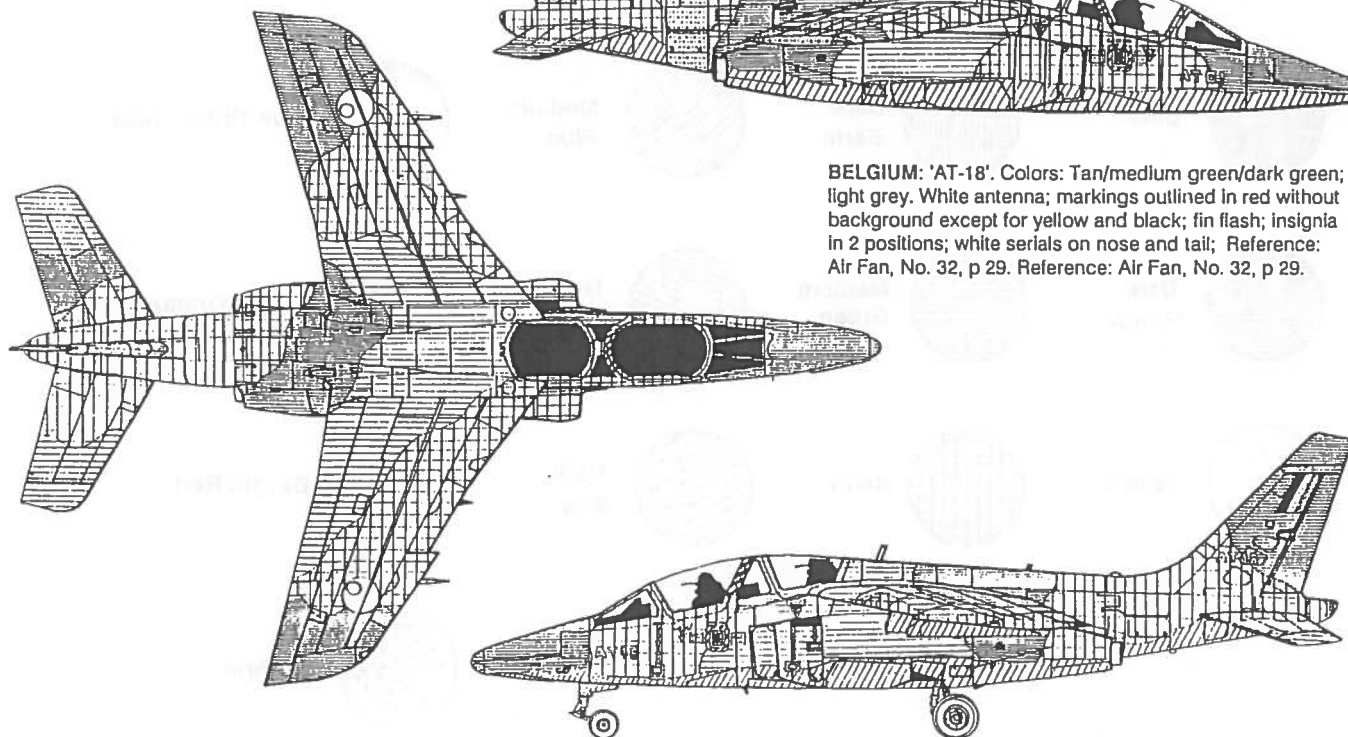
BELGIUM: 'AT-01' & 'AT-09'. Colors: Natural metal. Unusually large "AT-01" on tail; stencilled "AT-09"; minimum markings on AT-09; complete markings, in French, on AT-01; black antiglare panel on AT-01; fin flash; insignia in 2 positions. References: Air Fan, No. 5, p 5; Carnets de Vol, No. 41, p 39; Le Fanatique de l'Aviation, No. 114, p 18 & 19.



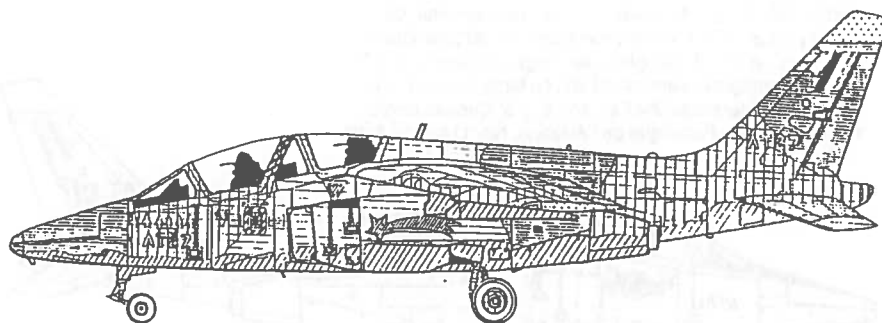
BELGIUM: 'AT-01'. Same as 'AT-18' except for day-glo wing tips and band around the fuselage. References: l'Encyclopedie de l'Aviation, No. 32, p 626 & 631; Air Fan, No. 30, p 11 & No. 8, p 11; Le Fanatique de l'Aviation, No. 114, p 18 & 19.



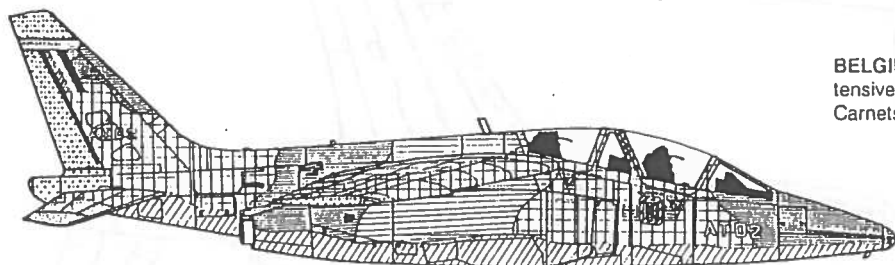
BELGIUM: 'AT-18'. Colors: Tan/medium green/dark green; light grey. White antenna; markings outlined in red without background except for yellow and black; fin flash; insignia in 2 positions; white serials on nose and tail; Reference: Air Fan, No. 32, p 29. Reference: Air Fan, No. 32, p 29.



BELGIUM: 'AT-27'. Same as 'AT-18', except for day-glo tips of wing and fin. Red "shooting star" on port side (painted by someone from 2e. Smaldeel?), 6 aircraft silhouettes in white on port side (reason unknown). Reference: Carnets de Vol, No. 41, p 41.



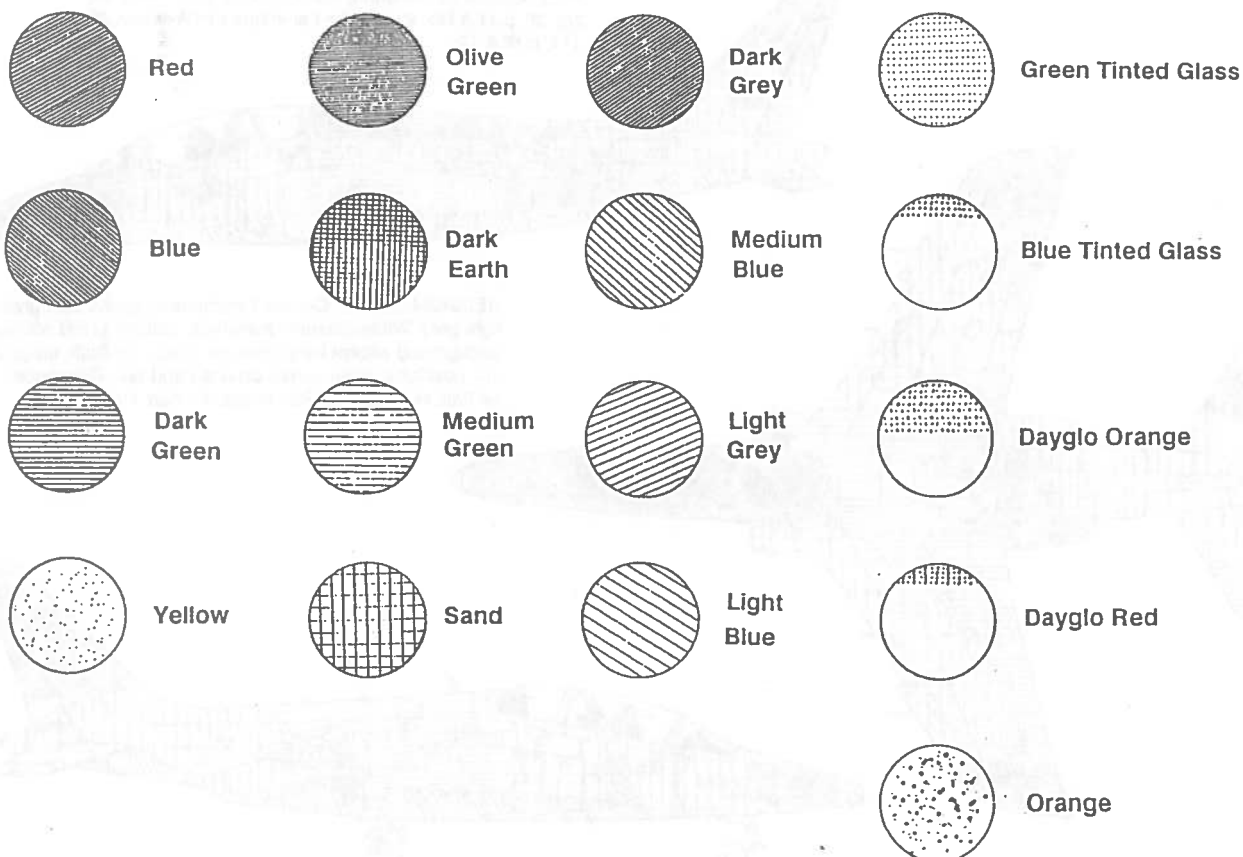
BELGIUM: 'AT-02'. Same as 'AT-18', except for more extensive use of day-glo. References: Air Fan, No. 123, p 25; Carnets de Vol, No. 41, p 41; Aero, No. 22, p 12.



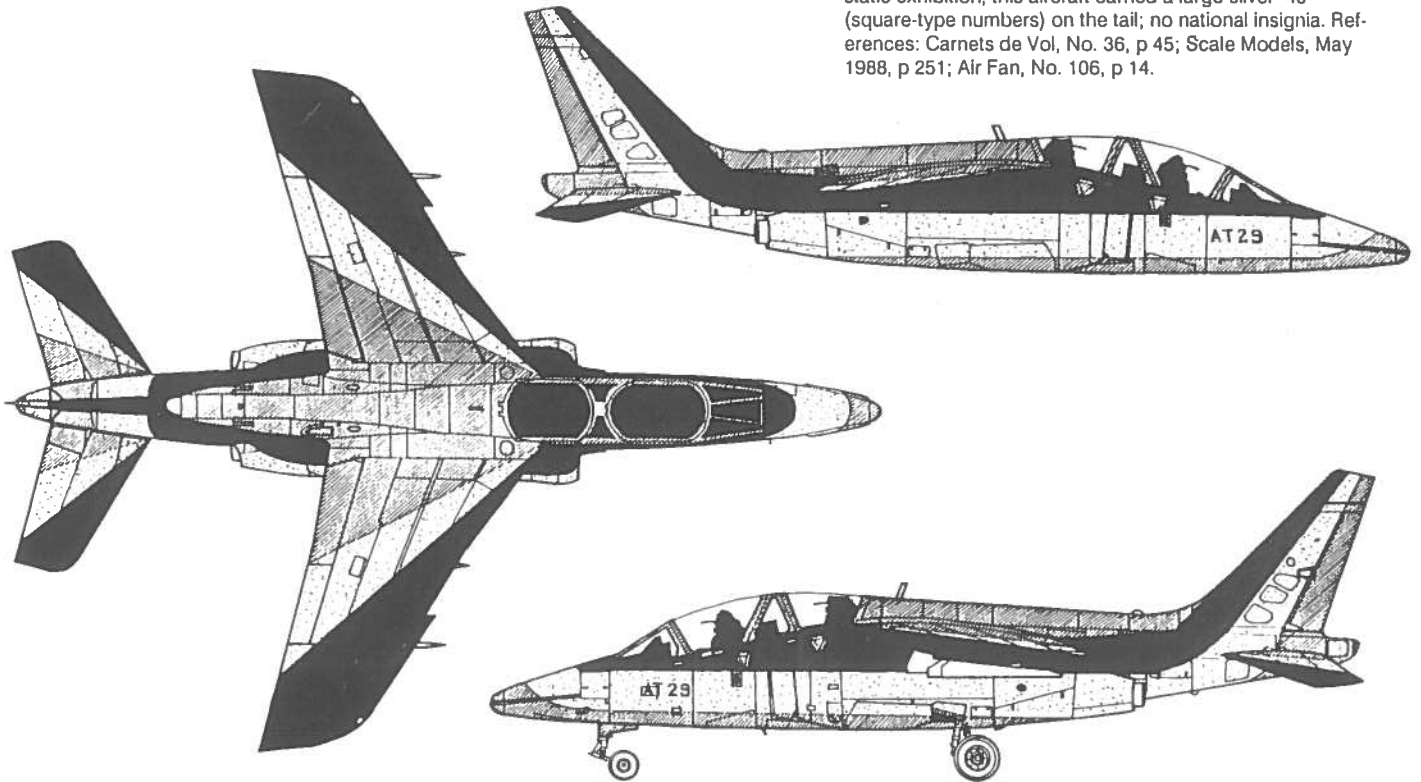
The day-glo markings carried on Belgian Alpha Jets weathers quickly and after turning yellow can even disappear exposing the white undercoat.

The day-glo patterns follow no discernible rules; aircraft of the same flight, at the same time, will carry different patterns, as will the same aircraft at different times. The pattern shown in Fig. 13b seems to have been used only on 'AT-01'. Fig. 13c seems to show the standard pattern. The pattern shown in Fig. 13d has been seen on aircraft flying with others wearing the "starboard" scheme, but no reason is apparent. The modeler must take care and work from photos of the actual aircraft he is attempting to depict.

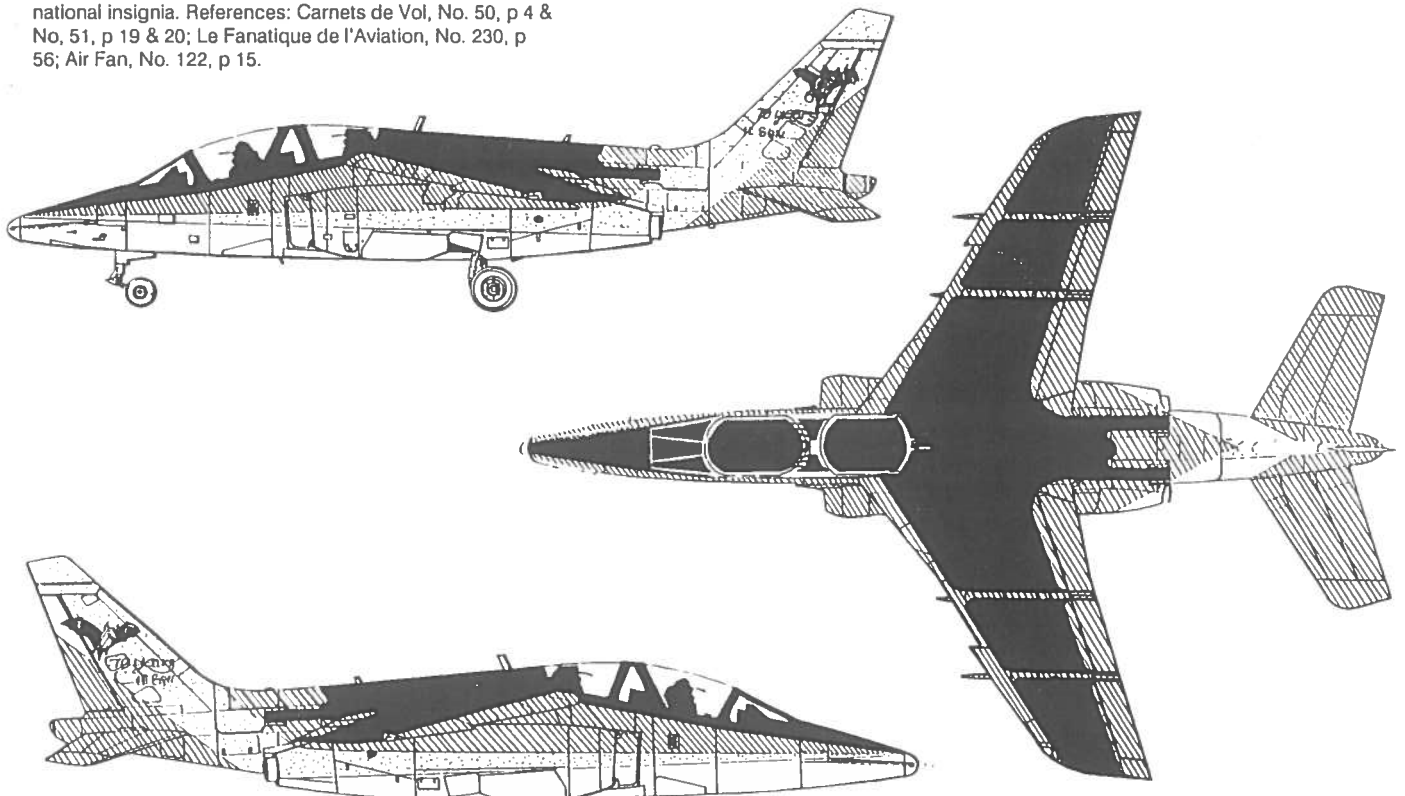
COLOR GUIDE



BELGIUM: 'AT-29'. 40th anniversary of the Advanced Flying School (Ecole de Pilotage Avance) at Brustem on 27/28 July 1987. Colors: Black/yellow/red..Note: While on static exhibition, this aircraft carried a large silver "40" (square-type numbers) on the tail; no national insignia. References: Carnets de Vol, No. 36, p 45; Scale Models, May 1988, p 251; Air Fan, No. 106, p 14.

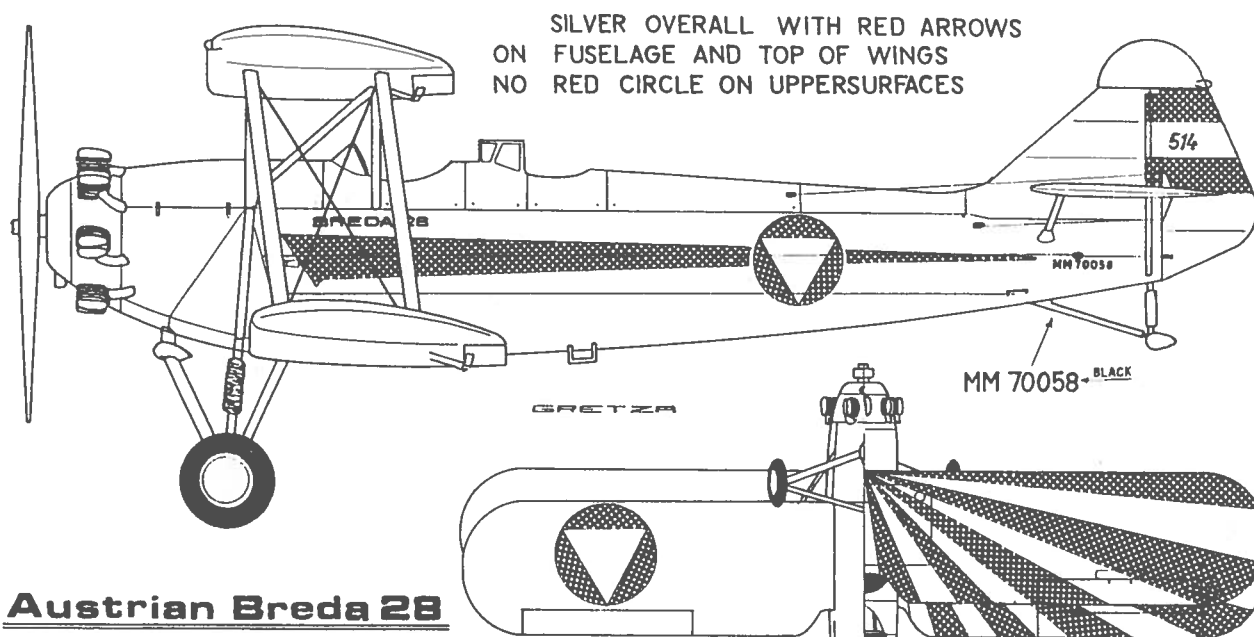
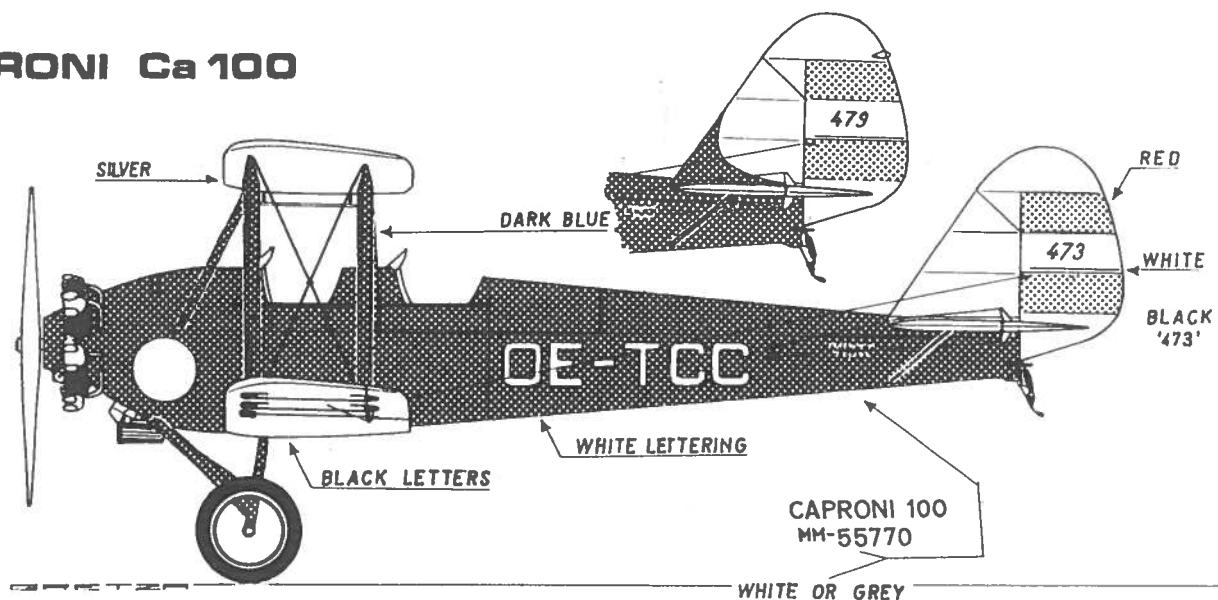


BELGIUM: 'AT-11'. 70th anniversary of 11th Squadron (1988). Colors: Black/grey blue/yellow/white. Note: Grey/black bat on tail; "70 Years 11 Sqn" in black on tail. no national insignia. References: Carnets de Vol, No. 50, p 4 & No. 51, p 19 & 20; Le Fanatique de l'Aviation, No. 230, p 56; Air Fan, No. 122, p 15.



OSTERREICHISCHE LUFTSTREIKRAFTE

CAPRONI Ca 100



Austrian Breda 28

511 - MM70061	517 - MM70077
512 - MM70062	518 - MM70089
513 - MM70063	519 - MM70091
514 - MM70058	520 - MM70092
515 - MM70060	521 - MM70093
516 - MM70066	522 - MM70094

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